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TEN YEARS' EXPERIENCE OF RINGWORM IN PUBLIC ELEMENTARY SCHOOLS.

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I WELL remember the consternation with which the advent of ringworm used to be received, and the meticulous care with which cases were examined before they were sent back to school. After ten years' closer study of ringworm in the mass one's impression is that so much anxiety was hardly justified. In those days one knew very little of the numerous brief and almost negligible cases which come and go and leave no trace behind.

As it is possible there may be some difference in virulence of ringworm in different localities, it should at the outset be stated that the writer's experience is based on a county area containing over 80,000 school children, scattered some in purely rural and others in countrified mining and manufacturing urban areas, but containing no large cities or towns.

As to prevalence in different parts of the country, apart from virulence, it is not easy to obtain comparable figures, owing to slightly different methods of collecting statistics, but there is reason to think that the numbers in town and country and in different distant areas do not vary very greatly.

Ringworm should be thought of in connection with impetigo

contagiosa, which it resembles in several essential particulars. The numbers of both diseases found in our Staffordshire schools on the day of inspection are not very dissimilar; the incidence according to age of each disease is much the same; they are about equally infective; both are endemic in the county, and appear as a rule in the form of single cases or little groups. Occasionally, however, in both cases, but only as a rare occurrence and under conditions not as yet clearly understood, the disease may become sharply epidemic in particular schools, though not, so far as I have observed, in areas or divisions of the county. The epidemics of both cease, as a rule, as suddenly as they arise, and one is often tempted to wonder whether the cessation can fairly be credited to the measures adopted. It may be added that when ringworm is on the open or relatively hairless skin it is as easily arrested as impetigo.

Number of cases occurring.—As medical inspection has enabled us to attempt a census of diseases of school children, we can say in what proportions diseases are present on the day of inspection. But these are not necessarily the proportions in which the diseases actually occur in children of school age, for the child may be kept at home by the disease and so escape enumeration. To this extent the statistics may mislead. The error thus caused is less in the case of ringworm than might be supposed, for it has been customary for teachers to bring up their excluded cases at inspection. Still, the percentages are no doubt somewhat of an under-statement.

To illustrate the percentage of the cases of ringworm discoverable on the day of inspection, a series of four years—1909–12—may be taken in which similar, or substantially homogeneous, groups of unselected children were inspected each year. This similarity in the groups compared is most important, for the prevalence of ringworm varies according to the age-period. During the years selected about 20,000 children were inspected each year as routine cases, of whom approximately 8000 were aged 5–6, 8000 were 8–9, and 4000 were 12–14. The percentages of cases of ringworm of the head presented each year were as follows:

1909	0·45 per cent.
1910	0·5 ,,
1911	0·5 ,,
1912	0·6 ,,

On an average during these years, therefore, about 5 children out of every 1000 examined were found on the day of inspection to have ringworm of the scalp.

This figure is not, of course, the same as the number of cases

annually occurring. The latter we can infer if we know the average duration of cases, and the average duration for Staffordshire children, as will later appear, is about nine months. In order to maintain a steady proportion of 5 cases per 1000 on the day of inspection when the cases have an average duration of nine months there must be 6·6 cases per 1000 occurring annually. The average annual number on the rolls during the four years was about 83,500, therefore theoretically there should have been about 551 cases per annum to account for the numbers actually seen on the day of inspection.

It was not until 1911 that we organised a system of reporting all ringworm cases as they arise. Head teachers notify us of every suspicious case, and as soon as convenient afterwards a medical inspector calls to verify it. Although teachers may not always detect cases in their early stage, there is no reason to suppose that many cases entirely escape them. In 1912 the number of head cases reported and verified was 587, in 1913 it was 619, in 1914 it was 535—numbers which sufficiently well agree with the theoretical calculation.

It cannot be said, therefore, that head ringworm is a very extensive trouble in school life. The numbers found on the day of inspection are about equal to the cases of declared tuberculosis of all kinds similarly found, and are about half the number of the cases of running ears. The numbers are *only one-fiftieth* of the cases of verminous heads.

In addition to head cases of ringworm, we have generally had face and body cases reported to the extent of about half the number of the head cases.

The percentage of cases of impetigo (head and face) found on the day of inspection during the same four years is given in the following table:

1909	1·15 per cent.
1910	0·9 ,,
1911	0·8 ,,
1912	0·7 ,,

The average number of cases, therefore, is about 8 per 1000 children. We do not know the average duration of impetigo cases, and we have not yet attempted to get daily reports of cases as they arise.

Incidence according to age.—It used to be taught that ringworm had no tendency to spontaneous recovery,* but the following table

* Emmett Holt, 'Diseases of Infancy and Childhood,' London: Sidney Appleton 1907, p. 941.

suggests the opposite, as does also the fact that the common variety of ringworm in British schools (microsporon) is practically unknown after puberty.

Scalp Ringworm. Incidence at Different Ages.

(Boys and girls in about equal proportions each year.)

	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	%	%	%	%	%	%	%
Children of 5– 6 . .	0·8	0·65	0·8	0·78	1·0	0·7	0·77
„ 8– 9 . .	—	0·4	0·3	0·49	0·45	—	—
„ 12–14 . .	—	0 07	0·06	0 22	0·15	0·35	0·24

Thus ringworm appears to be mainly a disease of young school life, and the liability to it declines rapidly with age.

That the same may be said of impetigo is shown by the following table :

Impetigo of Head and Face. Incidence at Different Ages.

(Boys and girls in about equal proportions each year.)

	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	%	%	%	%	%	%	%
Children of 5– 6 . .	1·8	1·5	1·2	1·0	0·95	1·4	1·6
„ 8– 9 . .	—	1·0	0·8	0·75	0·7	—	—
„ 12–14 . .	—	0·7	0·6	0·35	0·2	0·37	0·37

Incidence according to sex.—During the years dealt with in the above tables, 55,849 boys were submitted to routine inspection and 55,271 girls. Of the boys, 332, or 0·59 per cent., had scalp ringworm, but only 248, or 0·44 per cent., of the girls. Thus there is evidence of some influence of sex. It may in part be due to more of the slight cases escaping discovery in the case of the girls owing to their long hair, or it may be that the long and plaited hair of girls is some defence against ringworm. Be that as it may, it seems clear that girls are somewhat less liable to the disease than boys, for out of 778 cases of ringworm which were followed up, and which are referred to on a later page, 461 were boys and 317 girls, though no selection had been exercised.

Impetigo of the head and face shows no such sex difference. The boys had 0·99 per cent. of cases and the girls 0·98 per cent.

Low infectivity.—Ringworm, like impetigo, is a disease of low infectivity. Very close contact seems necessary for spreading it. It is not so much among children sitting in the same class as among children living in the same house or street that the cases are found.

Infectivity can only be relatively tested, and a rough method is to compare the number of cases found at inspection with the total numbers of children of the same age period in the schools, and, therefore, attending the same classes, and generally rubbing shoulders. On one occasion, when the test was applied to pediculosis, it appeared that 29 out of every 100 children thus known to have been exposed to infection were, in fact, infected. This may pass for a relatively high degree of infectiousness. On the other hand, in the case of ringworm the percentage was only 5·5, and in the case of impetigo it was 6·2 per cent.

A low infectivity for ringworm may be inferred from another line of argument. If the complaint were very infectious and difficult to get rid of, it seems probable that a considerable proportion of the schools found infected on the day of inspection one year would be identical with schools found infected the year before. Especially would this be the case in infant schools, for every year fresh supplies of childen at the most susceptible age are being "fed" to the infected schools. But it is notso. In 1908, 54 of our infant schools were found at inspection to have ringworm, and in 1909, 61 infant schools had it, but, so far from the schools being largely the same, there were only 16 schools common to the two years. Even if we suppose that these 16 schools had all derived their cases directly from the cases in the same schools in 1908—which, in fact, there was no reason to suppose—it would still have to be admitted that for every school where ringworm managed to persist into the second year there were two or three where it died down. The results for 1910, as compared with 1909, were similar.

It must not be supposed that this favourable result was due to any bold administrative handling of the outbreaks. We had not then grappled with the problem of ringworm as closely as we subsequently did. The matter still largely rested in the hands of head teachers, as it had done from time immemorial before the advent of medical inspection. The worst cases were no doubt excluded, but slighter cases were ignored, both from lack of observation and because many teachers shared the indifference of parents to the ailment. Finally, it had to be left to the head teacher to decide when to re-admit the cases. The dying down of outbreaks in those early days could only mean that infectiousness was slight.

Low epidemicity.—Roughly speaking, ringworm is always to be found in about half the number of our schools, but in a very large majority of schools it occurs as single cases or in groups of two or three. Epidemics are comparatively rare. The following table

shows the average annual distribution of cases during the three years 1912–14. It must be remembered that a single case of ringworm, whether a transient face or body case or a scalp case, if reported from a school sufficed to stamp that school as having had ringworm in the year in question.

Number of Schools affected with Ringworm, and Cases per School per Annum.

(Average of three years, 1912–14.)

Total number of schools in area.	Number of schools having ringworm.	Number of schools having the following number of cases during the year.				
		1–4 cases.	5–9 cases.	10–14 cases.	15–19 cases.	20 and more cases.
375	165	110	32	11	7	5

It is sometimes a little difficult to say whether a particular series of cases should be called an "epidemic" or looked on as a number of independent "sporadic" cases, but it may be accepted that out of the 165 schools with ringworm only 12 on an average of the three years could be considered to have it in epidemic form.

Unfortunately, we have no data for estimating the epidemicity of impetigo. It is generally found in single cases or small groups, but now and again spreads through a school. This occurs, I think, even less often than is the case with ringworm.

Treatment.—The treatment of ringworm has entered on a new phase since the application of X rays. The fungus and spores of ringworm are not really difficult to kill if only one can get at them, but they bury themselves in the deep hair follicles. Epilation has long been known as a useful aid to germicide lotions and ointments, and the X rays offer a convenient mode of epilation. Practically it may now be said that we have the means of completely controlling the disease in the individual child.

But the method has its drawbacks; it takes about two months, there is the temporary baldness, and occasionally permanent baldness has followed, and, moreover, on theoretical grounds damage to the delicate brain-cells has been feared. Without exaggerating these drawbacks there remains the difficulty, more particularly for county education authorities, that the method is somewhat costly both to the authority, and, in time and railway fares, to the parents.

On the other hand, ringworm by itself never killed a child, and

never, it might almost be said, apart from treatment caused an hour's suffering; and, as has already been pointed out, it probably invariably disappears before puberty. If, to these considerations we add the conviction of its low infectivity—so low, in fact, that with certain simple precautions we need not exclude children from school—and the conviction of its slight epidemicity, we may well ask, Why trouble about X rays? Or, rather, why not reserve them for the 5 to 10 per cent. of excessively protracted cases?

It will help us to a decision if we know the duration of casually-treated cases, and with this object the following table has been prepared. It deals with 778 cases, most of whom have been attending school all the time. The great majority had been "domestically" treated. Most mothers "know of something for ringworm." Ink, tobacco ash and water, "blue stone" and washing soda are vaunted; white precipitate ointment, sulphur ointment, Jeyes' fluid, and "what we use for the calves" are all popularly known and used. Very few of the cases, if any, have been persistently treated from first to last by a doctor; in more cases the mother may have seen a doctor once to get an ointment. Some of the cases had literally no treatment whatever except, perhaps—when not forgotten—the dab of oil or simple antiseptic ointment to keep hairs from flying about, which we prescribe in our regulations. Of course, no X-ray treated case has been included.

Many of the drugs used are by no means valueless so far as they go, but it may be accepted that the mode of application is generally casual in the extreme and wholly inadequate according to a skin hospital standard. It is just what might be expected from busy mothers imperfectly convinced of the need of treatment.

A word must be said about the nature of the data. Suspicious cases are notified by the teachers and verified by the medical inspectors as soon as convenient. When a case seems to be over, the teacher again reports, stating specifically (1) whether there is any look of scurfiness and (2) whether the hair is growing fully and freely on the spot. We rather encourage our teachers not to report so long as they can see where the ringworm has been, but this is a counsel of perfection. As soon as may be after the report of the end of a case the medical inspector again calls to verify, and thus in normal circumstances the beginning and the end are certified by a medical observer. But when staffs became depleted owing to the war verification was not always practicable, and we had to rely on the statements of teachers, checked only when the report seemed in some way dubious.

Thus there are two groups of cases in the total, the completely verified (254) and the unverified either as to beginning or ending or both (524). These two groups were first analysed separately, but when it was found that there was no essential difference between them either as to the average duration of cases or as to maxima and minima they were recombined and dealt with together.

Of the cases, 461 were boys and 317 girls.

Table showing Duration from Date of Discovery of 778 *Casually Treated Cases of Scalp Ringworm.*

Duration after discovery.	Number of cases which had terminated.	Percentage of cases which had terminated.
Over within three months . . .	163	20·9
„ six months . . .	375	48·2
„ nine months . . .	517	66·4
„ twelve months . . .	611	78·5
„ fifteen months . . .	665	85·4
„ eighteen months . .	699	89·8
„ twenty-one months . .	721	92·6
„ twenty-four months . .	741	95·2
Over during third year	27	4·8
„ fourth year . . .	7	
„ fifth year	3	

The average duration of cases from the date of discovery was nine months; the minimum was within one month, the maximum fifty-eight months, or just within five years. Nearly half the number of cases were over within six months, nearly 80 per cent within twelve months, but it was not until the end of two years that 95 per cent. of the cases had been accounted for.

The second quarter (fourth, fifth, and sixth months) saw the end of more cases than any other three-monthly period, viz. 27·2 per cent.

The duration of cases seemed to have very little direct relation to the vigour or completeness of treatment. Many which got well quickly were neglected or were being very casually treated, whereas the longest case the writer ever had personal experience of was that of the child of a servant, who was treated assiduously under his own supervision for three years. The case in the end rather suddenly got well while under a course of iodine treatment, which at an earlier stage had been tried for many months to no purpose, and which had been resumed in the third year in despair of any new

drug to try. This was many years ago, and before the days of X rays.

After what has been said about the decline of susceptibility with years, it is interesting to notice that the age of the child at the onset did not appear to influence duration in any regular or marked way. There were long cases and short cases at all ages.

Administrative measures.—Those adopted in Staffordshire are implicit in what has preceded. Head teachers at once notify suspected cases and the medical inspector proceeds to verify. Generally this is done at the next regular inspection, which may be several weeks ahead. Meanwhile the teacher is directed to treat the case as though it were ringworm, and to suggest that the parents should see a doctor; he also asks permission of the parent for the wearing of a washable cap or bonnet. If the parent declines to see a doctor the teacher suggests that the hair be cut short about the spots affected, and some simple application, like carbolised oil, be applied daily to prevent hairs flying about. If these precautions are refused or grossly neglected the teacher is expected to suspend the child from attendance, but for reasons already hinted, depending on the general indifference of country people to the disease, there is often considerable leniency.

The caps are of good blue cotton material and shaped like polo caps; the bonnets are pink or grey, and are shaped like sun bonnets. They are made in quantities for us at the sewing classes. When in use they are washed and boiled twice weekly under the direction of the education authority.

If reports of cases come in quick succession from a school, indicating an epidemic, the inspector visits at once and investigates. Any action deemed necessary may be taken, even to closing the school, but this is extremely rarely done.

When a case of ringworm appears to be over, the teacher reports as to scurfiness and as to the hair growing freely. If the report is quite clearly satisfactory on these two points the order is given to discard the cap. If there is still room for some doubt the decision is postponed for two or three weeks, or till the next regular visit of inspection. Naturally we always play for safety.

This method of dealing with ringworm in schools was started in 1911, and there has been no change for the worse in the number of cases occurring. But I am under no illusions as to the value of the precautions. If we were not dealing with an essentially benign disease, our precautions, like the casual treatment which is all that nine-tenths of the cases ever get, would, I think, be of little avail.

MENTAL DEFICIENCY AND THE BINET-SIMON TESTS.

By John Priestley,

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Tests for mental deficiency are much in the thoughts of school medical officers at the present time, more particularly in regard to the administration of the Mental Deficiency Act, 1913.

The definitions of the Act merit the closest study, for their practical spirit must of course be loyally accepted and must be our inspiration in all administrative action.

It is suprising how entirely the definitions fall within the province of observant common sense and how completely dissociated they are from technicalities. An idiot is stated to be one who cannot guard himself from common physical dangers—he is liable to fall into the fire, or under the horses' feet. An imbecile is not so bad as this, but he cannot manage himself, he cannot be trusted to go to school alone, or to make a purchase by himself, he is apt to lose his things, or to be imposed on, etc. A moral imbecile goes on committing crimes of a more or less serious nature—pilfering, being cruel or grossly inconsiderate or indecent—in spite of repeated punishments. Evidently any intelligent nurse or mother or school teacher could make the diagnosis as well as a doctor. There is nothing at all about high palates, or epicanthic folds, or ill-set ears; nothing about the storage of motor ideas, or the success of motor output.

The definition of the feeble-minded, which at least might have been thought to implicate the specialist, is in reality just as "common sense" as the others, but there are two strands of thought in it which unless kept absolutely distinct will lead to dire confusion. First of all there is the idea of the child so mentally defective, *i. e.*, so mentally unlike the ordinary child that it needs care, supervision, and control for its own protection or for the protection of others. Here, again, there is nothing recondite, common sense is all that is wanted to establish the facts—common sense and sufficient time for observation.

Secondly, there is the other train of thought, the idea of the child who, by reason of its defectiveness, appears to be permanently incapable of receiving proper benefit from instruction in ordinary schools—*appears* to be *permanently* incapable of instruction—an intelligent and experienced teacher who has had the child a couple

of years in his school will be able to give an opinion on that which will hardly be bettered by any doctor.

Nowhere in the Act is mental defect as such defined, but it is of course assumed and, indeed, it is stated here and there that the cause of the various disabilities spoken of has to do with the "mind." It is also stated repeatedly that the cause, whatever it is, must have been operative, *i. e.* must have been showing its effects, from birth or early age.

I do not mean that there is no room for the medical specialist in this matter of mental deficiency—very far from it. Only he can group and correlate the different types of cases; only the physiologically and psychologically trained mind is prepared for those flashes of integrating wit on which all progress in knowledge depends. But in essence the decision of mental defect is taken to be a purely common-sense affair and must be judged by criteria common to all sensible persons.

It is to be feared that the two separate, and even unrelated, ideas in the definition of feeble-mindedness, viz., the idea of needing protection and control and the idea of incapacity for ordinary instruction, will lead to a good deal of misunderstanding in practice. The idea of mental deficiency which is held vaguely by the generality of people and which on the whole predominates in the Act is undoubtedly the former. The mentally deficient child or person in this view is conceived of as irresponsible and as incorrigibly prone to act in anti-social ways, or if not himself anti-social at least as being capable of having offspring with anti-social tendencies. And the practical aim on which are focussed the efforts of reformers is to stop these anti-social actions in the present and prevent their transmission to future generations. I venture to think that no one in Parliament, and perhaps no one out of it, ever intended to mix up with the mentally defective who need control the congenitally word-blind child, who, by virtue of a defect of a limited part of his brain which leaves him otherwise perfectly sane, responsible and useful, is nevertheless permanently incapable of receiving proper benefit from the instruction in ordinary schools. And yet there are the words of the Act for any stupidly logical person to boggle over. Of course a way out will be found in practice.

These reflections lead one to the consideration of the Binet-Simon tests as a means of judging mental deficiency, a task which we must approach in the above-described severely practical spirit. The notion of devising a series of questions for each year of age as

a gauge of mentality—Binet and Simon give five questions for each year—was perhaps not very subtle, for schoolmasters in all ages have been doing much the same thing, but a great deal of thought has been bestowed on the questions in order to secure that they referred to universal experience and not to the experience of a special time or class. From age three to age ten the subject matter is skilfully restricted to non-scholastic things which European and American children, and, indeed, children of nearly every culture-stage or civilisation, could not but be familiar with. Such things are the child's self and the parts of its body, the main divisions of time, distinctions of weight and of length, simple counting, simple colours, simple manipulations, etc. At and after age twelve the questions are scholastic, and not more valuable for the purpose than ordinary school exercises; here practice and the "crammer" might make all the difference to the child's "mentality."

It was soon discovered that children refuse to be thus penned in. Some were able to answer not only all the questions proper to a given year, but also some questions of the years ahead. For them the plan was suggested of adding one year to their "mentality" if the child could answer five more questions from the years ahead. Why five? This artificiality strikes one as rather childish; it disheartens one.

As a means of grading mentality the tests have a value, especially as a rough-and-ready way of checking from a slightly different angle the opinion of the child's teacher. But I should never be disposed to press the Binet-Simon results against the considered judgment of an experienced teacher who had had the child under observation for some months.

The value of the tests as an aid in detecting mental deficiency is much more open to doubt. The tests certainly afford convenient standardised openings for conversation, during which one can observe the child's method of mental response, and the method of answering is generally a good deal more illuminating than the correctness or incorrectness of particular answers. So far they are useful, but as to considering every child defective who has a mentality three years behind its nominal age, that would be a highly dangerous rule, and is, I think, out of the question. I cannot recall a single case in which the Binet-Simon tests helped me to decide when I was in doubt before; the tests are ineffectual where they are not superfluous.

Binet and Simon are themselves ambiguous about the use of their tests in judging of mental defect. In one passage they say: "A retardation of three years indicates a child who should be regarded

as a suspect," *i. e.* suspected of mental deficiency. This, of course, is obviously true. But in a later passage they go further. They are defining idiots, imbeciles, and feeble-minded; the idiot, they say, never learns to communicate with his kind by speech, owing not to deafness, etc., but solely to defective intelligence; the imbecile similarly fails to learn how to communicate with his kind by means of writing; while the feeble-minded child is "one who can communicate with his kind by speech or writing, but who shows a retardation of two or three years (according to the rules already indicated) in his school studies, this retardation not being due to insufficient or irregular attendance."* As a definite rule this must be regarded as quite inadmissible. It will be seen that the spirit of their definitions is altogether different from that of the definitions in our own Act.

As a result of experiments on normal children in Staffordshire schools, I have come to the conclusion that the attempt to sift children into yearly groups by means of any set of simple questions gives a false sense of precision, nor is a grouping by years really necessary for the purpose of estimating mental defect. The following set of questions has been constructed out of the Binet-Simon lists, and seems to serve all practical purposes. The child is put through the whole of this paper, and the inspector is then able to say that a child has a mentality of "about normal age three," or a mentality of "between three and six," or is "a poor nine," etc.

Even when the tests are thus simplified no school doctor should presume to use them for estimating mental defect who has not repeatedly practised them on normal children, and the results of the testing should invariably be compared with the head teacher's classification of the child according to school standards.

BINET-SIMON TESTS (1911).

Name ..... Age .....
School ..... Date.....
(With Class or Standard.)

3 *Years.*

1. What is your name?
2. Show me your eyes, nose, etc.
3. What is this in the picture? (man, cat, etc.).
4. Say after me (two numbers).
5. Say after me (five logically connected words).

At this age few children can answer "Are you a boy or girl?" or

* Binet and Simon, 'Mentally Defective Children,' translated by W. B. Drummond London: Edward Arnold. Introduction dated July, 1914; Chap. III, pp. 38 and 78.

name any but the most obvious and familiar objects as in question 3 (*e. g.* will not name knife, penny, key, etc.).

6 Years.

1. Which is the longer of these two strips of paper? ($1\frac{1}{2}$ in. and 2 in.); the heavier of these two bags? (6 grm. and 12 or 15 grm.). A child of five should do this.

2. Arrange these two bits of paper (square cut into two triangles) to look like that square (show a duplicate). A child of five should do this.

3. Copy this (a diamond with acute angles and side of $1\frac{1}{2}$ in.). Use pen and ink. A child of five should be able to do a square in same fashion.

4. Count these pennies (thirteen pennies grouped but not superposed). A child of five will usually not count more than four or five pennies.

5. Is it morning or afternoon?

6. Tell me what a fork is? a table? etc. At the age of six the normal child defines familiar objects by their use.

7. Which is the prettier of these faces? (a normal outline face and a caricature; Binet and Simon have suitable outline pictures printed, and these are commonly used).

At this age few children can answer "Which is your right hand and which is your left?" or execute a command involving two or three stages, or name common colours, but at seven or eight years a child should do these things.

9 Years.

1. Pictures with missing parts (outline picture of person without arms, face without eyes, etc.). A child of eight should say what is missing.

2. What is the difference between wood and glass, paper and cardboard, etc.? A child of eight should answer this.

3. Say the days of the week, the months of the year, and tell me the date to-day. A child of eight should make a good attempt at this.

4. Should know the chief coins and be able to "play shop," giving varied change out of a shilling,

5. What is a fork, a table, a mamma, etc.? At the age of nine a normal child as a rule spontaneously defines not by use merely, but by structure and other features.

6. Simple "common sense" or "problem" questions. (Examples subjoined.)

12 Years.

1. "Absurdities" test; may be tried any time after age ten. (Examples subjoined.)

2. Make a sentence bringing in three words. This should take about one minute.

3. Say as many words as you can in three minutes. A child of twelve will often say as many as sixty.* The child's head should be covered with a cloth or the eyes bandaged.

4. What are charity, justice, kindness, or similar abstract words?

5. Restore order to disordered sentences. (Example subjoined.)

* One alert-minded boy of nine to ten once said over two hundred by connecting the words into a logical narrative, from which it may be inferred how difficult standardisation is in these matters.

Examples referred to above.

Simple "common sense" or "problem" questions:

What would you do if you felt sleepy?

If you found it was raining after you had started for school what would you do?

What would you do if you were to break something that did not belong to you?

Why should we judge a person by what he does rather than by what he says?

Etc.

"Absurdities" test:

(Begin by saying—I am going to tell you something with a catch in it—something quite silly—I want you to tell me what it is.)

I have three brothers, John, James, and myself.

John is taller than James, James is taller than Harry, Harry is taller than John.

I met a man walking along with his hands in his pockets twirling his cane.

A cyclist riding down a hill was thrown on to his head and killed. He was taken to the hospital, and the doctor after examining him said he would never recover.

An engine driver said the more waggons he had in his train when going up hill the faster he could go.

Disordered sentences:

bravely a defends dog good master his.

my have teacher I the correct asked exercise to.

home our early we country in left visit the to friends.

CERVICAL GLANDULAR ENLARGEMENT IN CHILDREN, AS EVIDENCE OF INFECTION.

By E. B. Gunson, M.D.Edin., M.R.C.P.Lond., Capt., R.A.M.C.

The present paper is based upon an investigation undertaken at the suggestion of Sir James Mackenzie, owing to the high incidence of slight enlargement of the tonsillar and other upper deep cervical glands in adolescents reporting, at the Heart Department of the London Hospital, with symptoms suggesting cardiac disease, but who presented no signs of such nor of disease in other systems, apart from the fauces.

The object of the work was to discover what bearing, if any, the glandular enlargement of these patients had upon the symptoms, or upon the signs observed and reported by the parents.

Summary of Literature.

A. *Anatomical and physiological.*—Lymphatic glands commonly

occur in chains, the arrangement being in relays, in the line of the lymph stream (2).

The upper deep cervical chain of glands is divided by Stiles (1) into an "upper and lower portion, the former situated above the level of the anterior belly of the omohyoid muscle, and the latter below it." The upper anterior group contains several glands, one of which, situated just below the angle of the jaw, at the anterior border of the sterno-mastoid muscle is known as the tonsillar gland, and the lymphatics of the tonsil have been traced directly to it. The efferents of the deep cervical chain form, ultimately, two large vessels which unite with the efferent vessels of the subclavian glands to constitute the jugular trunk.

"The lymph fills the spaces between all the tissue elements, so that any tissue can be regarded as a sponge soaked in lymph. In no part of the body does the blood come in actual contact with the living cells of the tissues" (5).

Movement of lymph.—"The movement of lymph is brought about partly by the pressure at which it is secreted, to a large extent by the contraction of skeletal muscles. The lymphatics all have valves, and muscular exercise is the greatest factor in the circulation of lymph, which, therefore, flows in one direction only" (5).

B. *Clinical.*—Waugh (7) considers that chronic enlargement of lymphatic glands in children is due, in a large majority of cases, to septic tonsillar infection. Of 135 cases, those which did not have a radical gland operation (this was performed in 12 per cent.) or require abscesses opening, recovered without further specific treatment in from four to six months after operation on the primary focus of infection. The tonsils in all cases were dissected out.

Mathews (3), investigating the tonsils histologically, found in 8 cases of cervical adenitis that the tonsils were tuberculous in 5 cases. Fifty-seven tonsils of patients not clinically tuberculous showed no tuberculous lesion.

Judd (1) states that direct extension from the cervical region into the mediastinal glands is impossible, and that inflammations and neoplasms affecting the cervical lymphatics are local until they pass into the general circulation. In histological examination of the tonsils from 1000 cases, 2·3 per cent. had tuberculous lesions.

Mitchell (4), reporting on the infection of children with the bovine tubercle bacillus, considers that the faucial tonsils not only act as the most frequent portals of entry for the tubercle bacillus in tuberculosis of the cervical glands, but that in a large proportion of cases a well-marked tuberculosis of the upper deep cervical glands is secon-

dary to a small tuberculous focus in the tonsil. In 64 consecutive cases of children suffering from tuberculous disease of the upper deep cervical glands, he found histological evidence of tuberculosis in the tonsils in 24 cases (37·5 per cent.). An investigation of the hypertrophied tonsils removed from 90 children in whom the cervical glands showed no clinical evidence of tuberculous disease revealed histological evidence of tuberculous disease in 6 cases (6·5 per cent.), while 9 (10 per cent.) yielded positive results when inoculated into guinea-pigs.

Present Observations.

A. The symptoms presented by the adolescent patients reporting at the Heart Department of the London Hospital were chiefly lassitude, exhaustion, and breathlessness on slight exertion. In the majority of the cases no history of immediately preceding infection was obtained, and the children were frequently brought to hospital because the mother considered that there was "something wrong with the child."

The chief abnormal signs presented by many of these patients were slight or moderate enlargement of the upper deep cervical glands, associated with tonsillar enlargement in many cases, in others with faucial injection only. Such children not infrequently were poorly developed, with deficient expansion of the upper chest, but no demonstrable signs of pulmonary disease were present.

B. Allied to Class A, and illustrating the condition at an earlier stage, is a condition where cervical glandular enlargement is present in the later years of *childhood*—6 to 12 years (7). In such children, as the late Dr. Eustace Smith pointed out, post-nasal catarrh is extremely common. These children are in a state of poor nutrition, they have little or no appetite, and suffer from disturbances of the alimentary tract. Bronchial catarrh is frequent, and unless treatment is directed to the throat the chest condition is very intractable. With the subsidence of the post-nasal catarrh and removal of the tonsillar infection, by operative measures when necessary, the glandular enlargement rapidly disappears, and there is speedy improvement in the general health.

C. An investigation into the state of the cervical glands during the course of scarlet fever (carried out at the Grove Fever Hospital, S.W.) revealed several points of interest.

One hundred consecutive cases were observed throughout their

stay in hospital. Ninety-seven cases were mild, 3 cases were septic. Of the mild cases all recovered; one of the septic cases died on the thirty-fourth day.

Age and sex.—Eighty-six cases were under 12 years of age; 66 were males, 34 were females.

Length of stay in hospital.—The uncomplicated cases were sent to a convalescent hospital about the end of the fourth week, or to their own homes about the end of the sixth week.

Tonsils and fauces.—Ninety-one cases on admission presented enlargement of the tonsils and injection of the fauces. In 9 cases there was no enlargement of the tonsils and in 3 cases the fauces were apparently normal. One case, in which tonsillectomy had been performed a few weeks before admission had injected fauces; in this case the tonsillar glands were enlarged.

Glands.—On admission 99 cases presented enlargement of the tonsillar glands; in 84 of these cases enlargement of other of the upper deep cervical glands was also present; in one case the glandular enlargement was unilateral. In no case was there general glandular enlargement comparable with the cervical enlargement. Eighteen cases, however, had enlargement of glands either in the groins or axillæ. In 5 cases small hard glands (about the size of peas) were present both in the axillæ and groins; in 2 cases in the axillæ only; in 6 cases in the groin only; while in 2 cases a large soft gland was present in one axilla, and in a third case a similar gland in the groin; no local causes were obvious. The enlargement of the hard glands in these regions persisted, that of the softer glands occurring in 3 cases quickly subsided.

Duration of tonsillar and glandular enlargement.—In the uncomplicated cases the tonsillar enlargement and faucial inflammation usually disappeared towards the end of the first week, the cervical glands subsiding a few days later. In 14 cases the enlargement of the upper deep cervical glands persisted until discharge. Of these 14 cases 8 belonged to the group in which small hard glands were present either in the axillæ or groins. In 4 cases the tonsils appeared normal. In the remaining 10 cases the persistence of cervical glandular enlargement was accompanied by persisting enlargement of the tonsils and injection of the fauces.

Severe complications.—There occurred 3 cases of nephritis, 4 cases of arthritis, 2 cases of mastoid suppuration (1 fatal), and 6 cases of secondary cervical adenitis.

Tonsillar and glandular enlargement in relation to complications: Three cases of nephritis.—The cervical glandular enlargement per-

sisted in one case throughout, in the second case till the thirty-eighth day, in the third case till the ninetieth day.

Four cases of arthritis.—The cervical glandular enlargement persisted in one case till the eighty-fourth day; in the second case till the thirty-eighth day. In the remaining two cases the glands subsided at the end of the first week and did not recur with or after the onset of the arthritis.

Two cases of mastoid suppuration.—The first, a case of septic scarlet fever, died on the thirty-fourth day from suppurative meningitis, secondary to the mastoid condition. The glandular enlargement was marked and persisted till death. In the second case the cervical glandular enlargement subsided on the seventy-ninth day, after the mastoid operation wound was healed.

Summary and Conclusions.

(1) Glandular enlargement is evidence of an infective process situated in the lymphoid tissue specifically drained by such glands. The flow of the lymph from the infected tissue is in one direction only, and each gland drains a definite and restricted area, the tonsillar lymphatics, *e. g.* passing directly to the tonsillar gland.

(2) In the majority of cases of chronic cervical glandular enlargement the associated infection is simple in nature and quickly responds to appropriate treatment, the glandular enlargement subsiding as soon as the infective process is removed. Fourteen per cent. of scarlet fever patients, however, on discharge from hospital presented evidence of persisting throat infection (evidenced by glandular enlargement) in spite of energetic treatment.

(3) Persistent cervical glandular enlargement in the course of scarlet fever was found to be associated with severe constitutional symptoms, and complications which included nephritis and arthritis.

(4) When *chronic* cervical glandular enlargement persists in spite of local treatment of the throat, the lymphoid tissue involved (*e. g.* tonsils) is frequently the seat of a tuberculous lesion, the glands being secondarily infected.

(5) Simple chronic glandular enlargement in young children is associated with malnutrition, and alimentary and respiratory disorders. When the glandular enlargement persists into adolescence, or develops, these patients suffer from apathy, exhaustion, and dyspnœa on slight exertion. The symptoms are sufficiently severe to suggest cardiac disease, which careful examination fails to reveal.

This association is so important that it indicates early and complete treatment—directed to the infective focus—in all cases of cervical glandular enlargement, including operative measures when required.

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INFANTILE PARALYSIS.*

By Samuel G. Dixon, M.D.

Commissioner of Health for Pennsylvania.

Anterior poliomyelitis is a subject upon which much work has been done and much been said, but there is as yet a dearth of exact knowledge. I wish to-night to refresh your memory upon the active part taken by the Pennsylvania Department of Health, and the recommendations which may be put forth as a result of this work. While generalisations are uncertain, we must be prepared for an epidemic condition of poliomyelitis this year, although the history of epidemics of poliomyelitis does not point to a recurrence of an epidemic or a large number of sporadic cases this season.

The history of the disease dates back to 1838. Since this time it has extended from Norway to Northern Alaska, and to most of the southern states of this country. In 1907 the first epidemic occurred in Pennsylvania. It began in midsummer, and increased in severity until November. The annual report of the Pennsylvania Department of Health for 1907 (pp. 420–440) contains a complete study of the work done during the epidemic.

This article is particularly interesting because it cites the fact that "a Gram-positive diplo- or tetracoccus was recovered when the spinal fiuid was poured into glucose bouillon and incubated. This Gram-positive diplo- or tetracoccus was found in all the cultures from the nose and throat. None of these cultures produced any pathogenic manifestations in experimental animals which could be compared to poliomyelitis; indeed, they seemed devoid of pathogenicity."

* A paper read before a public meeting of the Philadelphia Pediatric Society on June the 12th, 1917.

This report shows the work done with animal inoculation at this time—1907. Spinal fluid from patients with the disease was injected into the spinal canal of monkeys. No results were obtained. We are watching the Chicago workers, who, at the present time, seem sanguine of the results obtained with an organism which they have isolated.

In the epidemic of 1907 the various stages of the disease were studied. One hundred and thirty-eight cases were reported that year. Seven counties shared in the outbreak. In 1908 Pennsylvania suffered slightly. In 1910 the total number of cases reported was 1112; 269 deaths occurred. We therefore looked forward to 1911 with anxiety, but only 177 cases occurred. In 1912, 267 cases were reported; in 1913, 141 cases; in 1914, 113 cases; and in 1915, 162 cases. A definite decline followed by a slight rise is thus shown.

During these years the reported cases were scattered over the state, and often occurred in extremely isolated districts, but in 1915 an epidemic of about 100 cases occurred in Erie.

In 1916, during the first six months of the year, 22 cases appeared in Pennsylvania, scattered over 45,000 square miles. As the summer approached, a severe outbreak occurred in the city of New York, an outbreak previously unequalled in the number of cases, rapidly extending into New Jersey and other states. Because of the hysteria seizing the people, the question of dealing with the psychological condition thus caused arose. While there was much evidence of direct contact as the cause of the disease, the possibility of the presence of an intermediate host or carrier could not be gainsaid. Three weeks' quarantine was adopted in New York, and four weeks' in Philadelphia. This year—1917—the quarantine throughout the state of Pennsylvania will be three weeks. As a means of prevention of the spread of the disease, railroad stations and similar places were guarded. Children under thirteen years of age without a health certificate were deprived of the privilege of entering the state. All cars carrying second-hand furniture were disinfected. All transportation vehicles were thoroughly cleaned. There was considerable trouble with educators throughout the state. These people seem to think that education produces immunity to disease.

As a result of the precautions observed above, the city of Philadelphia escaped with an incidence of 1 case of poliomyelitis to 15,000 population. Compare with this the New York figure of 27 cases per 15,000, and in Newark of 49·5 cases per 15,000. In other words, this latter figure shows that the infection was about fifty

times greater than in Philadelphia. It was noticeable that the terminals of great railroads became centres of infection. By the quarantine of these centres much was done to prevent cases coming to large cities. The people were advised to keep away from infected areas. In Pennsylvania cases were always strictly quarantined. In some of the infected districts in New York there was placarding without real quarantine. Everything possible was done in New York, however, to carry cases to hospitals, where, of course, good quarantine must have been enforced.

Fortunately our Department in 1915 was organised to take charge of epidemics and catastrophies, and mobilisation was quickly accomplished. Railroad stations, ferries and steamboat landings, public highways, motor- and row-boats, bridges and automobiles were guarded by our police.

Certificates from health officers in their home districts were required from travelling children. Passenger cars and freight cars carrying second-hand furniture were disinfected. Thousands of sick and infected children were excluded from our districts by these measures. We realise that it is claimed that persons who do not become immune by having the disease will become infected when exposed, but possibly so slightly as to escape recognition under ordinary circumstances. This is not satisfying when we consider that among thousands of children in institutions 100 per cent. either resist the disease entirely, or to such an extent that they never appear to be sick.

In our laboratories in 1916 a large number of healthy monkeys were exposed to monkeys sick with the disease, and none of the healthy monkeys developed paralysis. We even smeared the mucous membrane of the healthy ones with secretions from the sick monkeys, but never caused the illness to be transmitted. In explanation of the reason for the entire non-susceptibility of institutional children as compared with children in private homes, we may offer the possible explanation of food being always served cooked in institutions, whereas much of the food in private homes is uncooked, especially among the Italians. This explanation is not nullified by the occurrence of infantile paralysis in breast-fed babies, because such infants may pick up a variety of infections from the hands and the surface of the nipples of the mothers.

The laboratory does not yet give us the cause of poliomyelitis. The field of research has been somewhat reduced. To-day we are working along several lines of immunity and for the prevention of infantile paralysis. As health officers we are particularly interested

in the prevention of the disease, or in an antitoxin that will prevent paralysis.

To-day we are in the midst of most interesting work. We are not altogether alone in our experiments. With others we are striving to produce a substance that will modify the disease commonly known as infantile paralysis. With a virus made from the human spinal cord of a patient dead from the disease, a monkey—most susceptible of the lower animals—was injected. A young rabbit was next inoculated intraperitoneally with a saline emulsion of a portion of this monkey's spinal cord. This produced what we called poliomyelitis in the rabbit, and from this rabbit's spinal cord, and from rabbits successfully inoculated with the emulsion from the preceding rabbit's cord, a series of ten rabbits was inoculated. Then, believing we had a modified condition, we reversed our work, running down the line of rabbits, each time using a stronger virus. When we reached No. 4 we returned it to a monkey, with a modified result. This experiment is only sketched in order that you may have some idea of the methods adopted in our study of the disease.

We have nothing to say to the public that would give them any false hope. They must understand that we do not as yet know what produces the disease. The diagnosis depends upon keen diagnostic skill. We cannot agree with experimenters who have suggested that they can diagnose the disease on the stage of the microscope. Mistakes can often be made with the microscope, and the same abnormalities of the spinal fluid may obtain in conditions other than poliomyelitis.

To the public we would recommend a close watch upon children during the present season, and the calling of a physician upon the least suspicion, remembering that the disease has a variety of ways of presenting itself.

It is to be hoped that the laboratory will soon produce a biologic product or therapeutic agent that will be an exact and specific remedy for this disease. The people must be educated. The importance of thorough general cleanliness is to be emphasised. We recommend the cooking of all foods for all children. If the disease should arise the congregation of children should be discouraged. Children should have regular feeding in moderation. Babies and small children should not be chilled at night. No animals with parasitic insect life should be allowed in the house. Adults who travel should brush their clothes very thoroughly before coming into contact with any children. Rubbish should be destroyed. Breeding-places for mosquitoes and other insects should be removed.

Remember, in this connection, that bell-trap drains are often breeding-places for mosquitoes. The quarantine of cases this year in Pennsylvania will probably be three weeks, but whether or not a general quarantine be established will depend entirely upon the progress of the disease.

I want again to refer to the need of sending for a physician when your child gets sick. In this early stage he is much needed. The child needs absolute quiet and rest. If any deformity comes from the attack you want the orthopædist. Parents are specially warned against resorting to charlatans, who promise the impossible. Don't permit manipulation, electricity, or massage, except under the advice of a physician of high standing, otherwise the child's sole chance of recovery may be swept away by vicious treatment.

TWO FRESH CASES OF MENINGOCOCCAL INFECTION WITH PRESENCE OF THE MENINGOCOCCUS IN THE PURPURIC ERUPTION: CULTIVATION OF THE MENINGOCOCCUS FROM THE SERUM OF A VESICLE IN ONE OF THE CASES. OCCURRENCE OF A STRAIN OF MENINGOCOCCI DIFFERING FROM THE TYPICAL MENINGOCOCCUS.*

By A. Netter, Marius Salanier, and Mlle. Blanchier.

In our communications of July the 22nd† and November the 18th, 1916, we established the possibility of recognising, by microscopical examination, the nature of purpuric lesions in the course of cerebro-spinal meningitis or even apart from any meningeal localisation.

We have recently made a similar observation in two other cases, which serve to confirm and complete our original conclusions.

We will begin by giving a short account of these two fresh cases.

The first is that of a previously healthy infant seen in private practice, aged 17 months, who was suddenly seized with very violent convulsions and high fever in the night of June the 15th–16th. On our arrival on June the 16th at mid-day the child was in subintrant convulsions. There was no sign of meningitis to be found, and there was merely a slight eruption, resembling German measles, at the back of the head. Lumbar puncture gave issue to a perfectly

* A paper read before the Société de Biologie, Paris, on June the 30th, 1917.

† *Vide* British Journal of Children's Diseases, 1917, xiv, p. 101.

clear and apparently normal fluid under no tension. It contained, however, a slight excess of albumin, and eleven leucocytes per cubic millimetre could be counted. There were no micro-organisms on direct examination or in cultures.

After the puncture the convulsions ceased, but the temperature kept above 104° F., and there was much prostration. In the afternoon of the 17th we found a discrete purpuric eruption on several parts of the body. We at once thought of a meningococcal infection, and decided to inject meningococcal serum. Although there were no more signs of meningeal involvement than there had been on the previous day, it seemed advisable to perform a fresh lumbar puncture, as we had determined to inject the serum into the spinal canal, whatever the character of the fluid obtained. On this occasion we obtained a purulent fluid containing meningococci.

As the result of energetic serum treatment, the child recovered, though it developed arthritis in thirteen joints. We were able to find the meningococcus on direct examination, and in cultures of the pus from two of its joints. It was possible to identify this meningococcus with a strain, for which M. Nicolle, of the Pasteur Institute, had supplied a very active serum, for which we are doubtless indebted for the recovery of this remarkably severe case.

On scarification of a purpuric lesion on June the 18th, after carefully washing it, we obtained smears, in which we were able to detect diplococci shaped like coffee berries, and not staining by Gram, which we did not hesitate to regard as meningococci.

The second patient, aged 6½ years, was admitted on June the 20th in Dr. Triboulet's ward for urgent operation with the diagnosis of appendicular peritonitis.

The patient's appearance on admission was, to some extent, suggestive of peritonitis, the features being drawn, the eyes hollow, the tongue dry and coated, the pulsed rapid and feeble—130 to the minute. But the abdomen, which showed a scaphoid retraction, was lax, and could be readily palpated. Attention was immediately drawn to some small purpuric spots situated on the abdomen, and to some others scattered on the limbs. On making an examination for meningeal signs, some degree of nuchal rigidity, Kernig's sign, and the meningeal streak were found. Lumbar puncture gave issue to a definitely purulent fluid, which, on microscopical examination, showed numerous meningococci. In spite of three injections of serum (30 c.c. on the 20th, 40 c.c. on the 21st, and 40 c.c. on the 22nd), the condition got worse, and the child died on the night of the 22nd to the 23rd.

Cultivation of the cerebro-spinal fluid and blood showed meningococci. On the 22nd the purpuric spots were more numerous, and some were covered with vesicles.

Examination of the serum of the vesicles from a purpuric spot on the little finger and big toe showed a number of diplococci shaped like coffee-berries and not stained by Gram.

After due antiseptic precautions, we obtained from the serum of the vesicles on the finger and toe pure cultures of meningococci which, like those of the micro-organisms obtained from the cerebro-spinal fluid and blood, were agglutinated by the anti-meningococcal serum B., and were identical with those of the micro-organism isolated from the cerebro-spinal fluid and knee of the first patient.

In a third child who presented purpura with suppurative irido-cyclitis without suppurative meningitis, examination of the purpuric patches remained negative.

The study of these cases and those which we have previously recorded enables us to draw the following conclusions:

(1) The meningococcal nature of the diplococci in the purpuric spots of cerebro-spinal meningitis can rapidly be established. We had positive results in four out of seven cases. Positive results were constant in the three patients in whom the purpuric lesions were covered with vesicles.

(2) The morphological characters of the cocci in the preparations appeared to us to be sufficiently convincing. In one case we succeeded in obtaining typical colonies on cultivation.

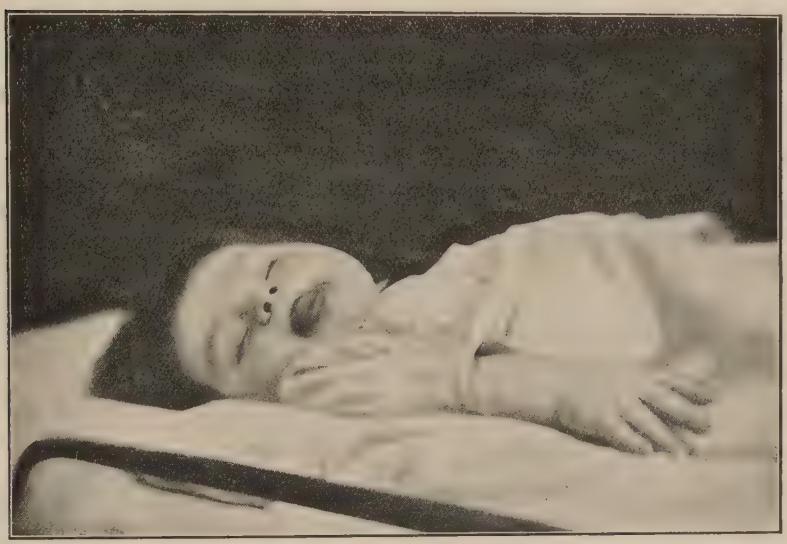
(3) The interest of these cases is all the greater, as in two patients, the fluid withdrawn by lumbar puncture remained normal, and in the third it was normal at the first puncture.

(4) In our last two cases we succeeded in determining the strain of the causal meningococci. They were not agglutinated by the typical anti-meningococcal serum, but by that prepared against a strain of meningococci which Gordon, Ellis and Arkwright have shown to be frequently active among the English troops. This is also the predominating strain in Paris at the present time. These cases confirm what we have frequently stated as to the probable occurrence in most cases of purpura with meningitis of a type of meningococci differing from the ordinary strain and the value of a polyvalent serum. Thanks to the employment of a serum prepared from meningococci of this type we succeeded in curing our first patient, although her attack was particularly severe.

MONGOLISM ASSOCIATED WITH CONGENITAL CATARACT.

By F. Parkes Weber, M.A., M.D., F.R.C.P.Lond.

The association of mongolism with congenital deformities has been frequently referred to in the literature of the subject. Congenital heart disease (valvular malformation) in mongoloid idiots has been recorded by A. E. Garrod (1) and others (2). W. Bertram Hill (3) several years ago gave a summary of the various congenital



Photograph of a case of mongolism associated with congenital cataract.

abnormalities which had been met with in cases of mongolism. He thought that congenital heart disease was present in 10 to 20 per cent. of all cases. The only published account that I can find of the association of mongolism with congenital cataract is that given by him (Case 5). In his case the child died very suddenly thirty-six hours after the operation of needling.

For the present case I am indebted to my colleague, Dr. R. Gruber, under whose care the child was admitted to be operated on for congenital cataract. (He has already operated on one eye.) The patient in question is a boy, S. H—, aged 13 months, of Hebrew origin. He has a brachycephalic head and the palpebral fissures slope upwards and outwards in the mongoloid style. The bridge of the nose is depressed and broad. He seems happy and contented if

left to himself, and mostly lies with grimacing face and with his large tongue more or less protruded between the lips (see illustration). The belly is big and prominent and there is an umbilical hernia. The presence of rickets is evidenced by considerable "beading" of the ribs. None of the teeth are yet cut. Besides the congenital cataract there is internal strabismus, with (sometimes) nystagmus-like movements. The thumbs and little fingers are rather short in proportion to the other fingers, and the little fingers present a slight lateral curve* with the concavity of the curve towards the other fingers (not well shown in the illustration). Both the hands and feet look fleshy and clumsy. The child is flabby and feeble and can hardly hold its head up, but some of this muscular hypotony (amyotonia) may be connected with the rachitic element in the case. There is no cardiac disease, nor is there evidence of any abnormality in the thoracic or abdominal viscera. There is no "Mongoloid" bluish pigmentation about the sacrum or nates.

Bertram Hill, in his paper on "Mongolism," says (4): "In younger subjects the tongue is nearly always protruded. . . . The most striking condition of the tongue does not seem to appear till some little time after birth. The papillæ become enlarged and the surface of the organ covered with numerous and deep fissures. The term, *hacked*, which has been used in this connection, describes the condition exactly."

In the present case the tongue is certainly large, but there is none of this fissured condition with enlargement of the papillæ, as described by Bertram Hill. In an imbecile girl (P. K—, aged 14 years), however, who was recently under my care for observation in the hospital, the tongue, though if anything small rather than large, was "fissured" and covered with enlarged papillæ. She was not typically of the "Mongoloid" type; the upper part of the face was somewhat depressed, but the lower jaw projected. It seems that the large papillæ and the fissures observed on the tongue in the cases mentioned by Bertram Hill, constitute the not uncommon type of tongue, known as "scrotal tongue," "furrowed tongue," "cleft tongue," or "fissured tongue," which is met with in a great many otherwise normal persons. Excepting in mongolism this form of tongue is said to be always congenital, and it is sometimes familial. It has also been wrongly attributed to inherited syphilis. In ordinary persons it is of little consequence, excepting that, owing to retention of particles of food in the clefts, it favours a condition of superficial glossitis, with which in fact it is often associated, especially

* This is like Landouzy's "camptodactylia" (condition of curved little finger).

when the owner of such a tongue is suffering from alimentary or pyrexial affections.

The patient in the present case is the second child of a rather stout Hebrew woman, aged about 30 years or so, whose blood-serum gives a negative Wassermann reaction. For the photograph I am indebted to the kindness of Dr. H. Schmidt.

Mongolism need not, of course, necessarily be associated with idiocy or imbecility. Thus, G. A. Sutherland (5), at the Society for the Study of Disease in Children (January the 18th, 1907) showed a girl, aged 8 years, with shortening and curving of the little fingers, as in the present case, and with the oblique or slanting palpebral fissures characteristic of the Mongoloid type of imbecility, but she was perfectly intelligent.

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CONGENITAL HEART DISEASE IN A MENTALLY DEFECTIVE CHILD, WITH A NEGROID-MONGOLOID FACIES.

By F. Parkes Weber, M.A., M.D., F.R.C.P.Lond.

The patient, S. K—,* is a girl, aged 4 years, whose mother is English (a native of London) and whose father is German. Her head is brachycephalic, but large and capacious. The photograph (see figure) shows the general appearance of her face. The slight upward slant of the palpebral fissures outwards, is, however, unfortunately not well seen in the photograph. There is no epicanthus, nor epicanthus-like fold, present. The broad nose, with low, flat bridge, and the lips, cheeks, and soft parts above the eyes, look thick and coarse, and the face is highly coloured (at times) with red. The external parts of the ears are likewise large and thick,

* The paper was read at the Royal Society of Medicine, Section for the Study of Disease in Children, October the 26th, 1917.

and the upper edges of the pinnæ are excessively folded over. The hair of the scalp is curly, but it is rather scanty (this is not well shown in the photograph); there is no hair whatever on the eyebrows and lower eyelids; and there is hardly anything in the way of upper eyelashes.

The tongue is natural, that is to say, it is not large, nor kept lolled out, and is not specially rough, nor of the so-called "cleft" or "fissured" or "scrotal" kind. On the whole, the child is well-grown for her age; and there is no umbilical or other hernia. There is no special curvature of the little fingers, nor is there any abnormality of the hands and feet, excepting a decided bilateral condition of flat-foot (talipes valgus). Neither palm shows the single transverse "line" (crease-mark), as described by Reginald Langdon Down and

F. G. Crookshank in some Mongoloid idiots (generally in their left hands only).*

There are no signs of rickets. A striking feature is a condition of xerodermia, involving more or less the whole skin of the trunk and extremities. The skin is dry, rough, and in parts feels like sand-paper (owing to follicular projections). The thyroid gland is certainly not a big one, but it cannot be felt distinctly.

On examination of the heart, which is not decidedly enlarged (or, according to Roentgen-ray examination, only very slightly so), there is found to be a definite systolic murmur always present, especially well heard over the base, to the left of the sternum (the so-called "pulmonary area"). Nothing else abnormal can be detected in regard to the thoracic and abdominal viscera. I think that the child must have some form of congenital heart disease, perhaps congenital pulmonary stenosis; and it is just possible that the occasional high colouring of the face may be partly connected with it. There is no history of rheumatism and no "rheumatic nodules" can be detected. The only acute illness from which the child is known to have suffered is an attack of whooping-cough.

The patient's mother is a healthy-looking woman, aged 35 years, whose Wassermann reaction (Dr. H. Schmidt) is negative. She has, she says, only once been pregnant, the present patient being the fruit of that pregnancy. The child's father, whom I have not seen, is said to be a temperate man, in fairly good health. The child was born by the help of instruments (under chloroform); for the first month the mother suckled it, but after that it was bottle-fed.

A great difficulty is to decide on the child's mental development, for she is almost, or completely, deaf, and consequently cannot speak, and is, of course, "backward." She is certainly not quite clean in her habits. She is not mischievous or bad-tempered. She is said to find out things by observation, and knows that a hair-brush is meant for the hair and that a boot-brush is used for the boots, and so on. She can to some extent be made to do things by gesture.

On the whole, I think it probable that a certain amount of the child's mental backwardness is not dependent on the deaf-mutism, and that there is likewise slight imbecility (more or less of the Mongolism kind) present, associated, perhaps, with an element of cretinism, or infantile myxœdema. The presence of hypothyroidism

* *Cf.* F. G, Crookshank, "Mongols," 'Universal Med. Record,' 1913, iii, p. 26; and his paper on "Biology, Anthropology, and some Disorders of Childhood," in 'School Hygiene' for 1914, v, p. 65.

is suggested by the child's rough (xerodermatous) skin, scanty hair, and puffy facies. Mongolism is known to be occasionally associated with hypothyroidism, but it must be admitted that, in the present case, thyroid treatment has as yet led to no decided change of any kind; it has, however, been insufficiently tried, and will therefore be continued for a time.

There certainly seems to be a "Negroid" appearance in the child's face, and this reminds one that Dr. J. Langdon Down,* in his paper of 1866, which led to the separation of a "Mongoloid" group of feeble-minded children, referred also to other imbecile European children as sometimes having a Negroid, a Malayan, or a North American Indian physiognomy. In the present case the facies might, perhaps, be termed "Negroid-Mongoloid." Congenital heart disease (valvular, or due to other structural malformation) in Mongoloid idiots has been recorded by A. E. Garrod† and others.‡ W. Bertram Hill§ several years ago summarised the various congenital abnormalities which have been met with in cases of Mongolism and thought that congenital heart disease was present in 10 to 20 per cent. of all cases. Dr. H. Morley Fletcher, however, tells me that congenital heart disease is not rare in imbecile children other than those of the Mongoloid group.

CONGENITAL HIRSUTIES IN A CHILD ("SIMIAN TYPE").

By F. Parkes Weber, M.A., M.D., F.R.C.P.Lond.

The patient‖ is a girl, E. W—, aged 4 years, born in London, of Irish and Austrian parents (not Hebrew). The hypertrichosis affects the forehead, temples, sides of face, the back (especially the upper and lower portions and the vertical line over the spinal column), and the upper and lower extremities. The regions of the axillæ, groins, pubes, front of the trunk, and the neighbourhood of the mouth and nose are not hairy. The child has corneal opacities

* J. Langdon Down, 'London Hosp. Rep.,' Lond., 1866, iii, pp. 259–262.

† A. E. Garrod, 'Trans. Clin. Soc., Lond.,' 1898, xxxi, p. 316; 'Lancet,' London, 1898, ii, p. 1258.

‡ F. Langmead, 'Reports of the Society for the Study of Disease in Children,' London, 1908, viii, p. 276; George Carpenter, *ibid.*, 1908, viii, p. 278; and others.

§ W. Bertram Hill, 'Quart. Journ. Med.,' Oxford, 1908, ii, pp. 49–68.

‖ The case was shown before the Dermatological Section of the Royal Society of Medicine on July the 19th, 1917.

from old phlyctenular keratitis, and has been treated for adenoid vegetations, enlarged tonsils, and otorrhœa, but otherwise shows no signs of disease, and is mentally normal. There is no marked prognathism of either jaw, and when the jaws are closed, the lower teeth come behind the upper teeth, as they do in ordinary individuals. The nose and lips and cheeks are thick, and the bridge of the nose is low (see figure). There is nothing to suggest the presence of a hypernephromatous tumour in the abdomen, and a Röntgen skiagram of the base of the skull shows nothing abnormal about the pituitary

fossa. There is no sign of any precocious or abnormal sexual condition. The moderate degree of hirsuties present is rather of the "Simian type" (see further on) than of a type suggesting suprarenal or other endocrine disturbance. In the present case it is, according to the mother, congenital, but not familial. The mother's two other children (a girl and a boy) are said to be quite normal, and there is no history of hypertrichosis in any other members of the family. There is the usual history of "maternal impression." The mother says that whilst she was pregnant, about three months or so before the birth of this child, she used frequently to see a monkey, which belonged to a lady in the neighbourhood.

There is no evidence of congenital syphilis. The Wassermann reaction has not been taken in the patient herself, but in her father, her mother and her brother it has been found to be negative (Dr. H. Schmidt).

Excluding cases of local hypertrichosis of the "nævus pilosus" kind I think cases of hypertrichosis or hirsuties may be roughly classified as approximating more or less to one or the other of two main types. In the *first*, which may be termed the "Simian type," the hypertrichosis is congenital or developmental and sometimes familial, and may be regarded as an example of so-called "degenerative" reversion. In spite of the absence of any similar condition in the family I regard the present case as a minor example (that is to say, of relatively slight degree) of the "Simian type." The *second type* is associated with, and secondary to, disorders of the endocrine organs (suprarenal glands, etc.), and is generally not congenital and not familial.

NOTES ON A CASE OF CONGENITAL UMBILICAL HERNIA, ECTOPIA VESICÆ, AND IMPERFORATE ANUS.

By Frederick C. Pybus, M.S., F.R.C.S.,

Surgeon to the Hospital for Sick Children; Assistant Surgeon to the Royal Victoria Infirmary, Newcastle-on-Tyne.

During the past five years ten cases of imperforate anus have come under my notice. In most cases the anal or rectal defect was the only one present. In this patient multiple defects were present, but were of such a nature that operation seemed to hold out the possibility of being able to restore the child to an almost normal condition. It was on these grounds that operation was undertaken, and was so far successful that the child lived nearly three weeks, and, had not digestive difficulties supervened, I believe it would have survived and perhaps become a useful member of society.

A male infant, aged 6 hours, was admitted under me at the Hospital for Sick Children on March the 28th, 1916.

It was the first child of parents aged 42 and 34 years, who were first cousins. There had been a previous miscarriage about a year ago.

The child was well nourished and of normal weight. There was a congenital umbilical hernia at the base of the cord, about the size of a hen's egg, containing small intestine which could be seen readily

through the thin membranous sac. Adjoining and below this was a bright red swelling, of about the same size, extending down to the base of the penis. This represented an everted bladder. The walls of this protrusion could be pushed back toward the abdomen and its lateral margins could be brought together, showing that the bladder could be completely restored. The neck of the bladder seemed fully formed and the penis was intact, suggesting that the sphincteric apparatus would be efficient if the bladder were restored.

The anal depression was well marked and I thought that only a thin membrane was present. Altogether the case seemed an unusually favourable one and worth trying to save.

Operation.—March the 28th, 1916, at 4 p.m. The umbilical sac was removed and the intestines returned within the abdominal cavity. The wound was packed with gauze. The margins of the extroverted bladder were then separated from the skin of the abdominal wall and behind this from the peritoneum, and the whole organ isolated. Its posterior surface was covered by peritoneum, while part of its lateral walls was raw from being separated. A probe passed up the urethra entered the basal portion and was a useful guide. It was noted at this time, the peritoneum being widely open, that the pelvic colon was intact and passed down to the pelvic floor. The bladder was now inverted and its lateral margins brought together in the middle line by catgut sutures. It formed a definite sac, and a fine catheter was passed up the penis into it and retained in position by a suture at the frenum.

The bladder was now returned into the abdomen and the abdominal wall repaired, a continuous catgut suture passing from the pubes to the region of the umbilicus. This suture was reinforced by interrupted sutures of silkworm gut.

The child was now placed in the lithotomy position and a small crucial incision made at the anus. This opened into the rectum, a thin anal membrane only being present, and allowed the meconium to escape.

The child seemed little worse for the operation. The catheter was removed on the seventh day, and after this micturition proceeded in a normal manner. The sutures were removed on the twelfth day, and after this the child was allowed to go home.

The mother wrote seven days later to say the child had died, but I was unable to get permission for any further examination.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, October the 26th, 1917.

DR. H. MORLEY FLETCHER, *President, in the Chair.*

A Case for Diagnosis.—Dr. ERIC PRITCHARD.—A girl, aged 2 years, was admitted into hospital on August the 29th, in a fit. The previous day she had been quite well, but towards evening seemed drowsy and feverish.

Past history.—No previous history of fits. She had not had scarlet fever, but earlier in the year had been under treatment outside for "some inflammation of the bladder." There was no history of syphilis.

On admission.—Temperature, 102° F. The child was unconscious. The body and limbs were extended and rigid. Mouth firmly clenched, and three teeth were taken out as the child seemed to be in danger of swallowing its tongue. Eyes widely open and fixed, pupils dilated and equal. Reflexes all exaggerated. The fit lasted all the evening until 10 o'clock when the child commenced screaming, and the temperature rose to 104° F. Heart, lungs, and abdomen apparently normal. Liver not enlarged. Spleen not felt. There seemed to be a little tenderness over the region of the kidneys posteriorly, rather more marked on the right side. The urine was acid and contained pus and numerous coliform bacilli. Lumbar puncture negative.

Progress.—After two hot-air baths (at 115° F.) the child seemed to show a little improvement, but did not show the slightest sign of recognition of its parents. Very drowsy and irritable. Temperature fluctuating. This continued for a week, the temperature gradually falling to normal. Ten days after admission the child showed more improvement and was able to sit up in bed, when it was noticed for the first time that she seemed blind. Ophthalmoscopic examination showed the fundus normal but very pale. Temporal side of disc pale. Edges clean cut. Vessels normal, somewhat congested. Macula normal. Retina appeared healthy. The child had since made good progress, and did not seem mentally affected. Examination of the eyes showed the same condition as that noted above. Wassermann reaction negative. The urine was normal.

Note on Three Cases of Melæna Neonatorum Successfully Treated by the Injection of Whole Blood or Blood Serum.—Dr. ROBERT HUTCHISON.—CASE 1.—A female child, aged 2 days. The day after birth began to pass blood from the bowel; no hæmatemesis nor bleeding elsewhere.

On admission the child was blanched and profuse melæna was present. The same evening 5 c.c. of human serum obtained from the blood of a patient with erythræmia was injected *sub cutem*. Next day there was a small attack of epistaxis but no further bleeding from the bowel, and the child was discharged a week later apparently well.

CASE 2.—A male child, aged 4 days. Two days after birth several hæmorrhages from the bowel took place, the last just before admission.

The child was well nourished, but pale and slightly icteric. Two hours after admission 5 c.c. of serum obtained from the same patient with erythræmia, as in the first case, was injected under the skin of the back.

Six hours later the child looked much better and only one further slight attack of bleeding had occurred. Next day the stools were normal, and three days later the child was discharged.

Case 3.—A male child, aged 30 hours. Blood was noticed in the first action of the bowels after birth and four tarry stools had been passed since. There had been no hæmatemesis.

A healthy-looking well-developed child of normal colour. Napkins showed typical melæna of considerable amount. On the afternoon of admission 8 c.c. of whole blood furnished by the ward sister were injected into the subscapular region. In the next twenty-four hours there were four more small tarry stools, after which the hæmorrhage ceased, and the child was sent home well three days later.

Dr. Hutchison said that there was nothing new in this treatment of the hæmorrhagic disease of the newly-born by the injection of human blood or blood serum. It was introduced by J. E. Welch in the year 1910, and many successful cases had been recorded since, especially in America. In this country, however, it did not appear to be very generally known yet, so it seemed worth while to put on record the three cases described above, which occurred consecutively. How the serum acted it was impossible to say with certainty, but it seemed probable that it supplied some constituent which was lacking in the infant's blood and which was essential for clotting. Human blood or blood serum was used in all the cases described, but normal horse serum or anti-diphtheritic serum would probably do as well.

Congenital Heart Disease in a Mentally Defective Child, with a Negroid-Mongoloid Facies.—Dr. F. Parkes Weber (*vide* p. 269).

SECTION OF OPHTHALMOLOGY.

February the 7th, 1917.

Three Cases of Fur Infection of the Conjunctiva from Cats.—Mr. Arnold Lawson.—Case 1.—The patient was a girl, aged 15 years, an only child, who was devoted to a Persian cat. One evening, during which she had frequently buried her face in the cat's fur, her eyes became suffused and she developed a bad sneezing fit. The next day both eyes were streaming with yellow, purulent discharge, and the lids were much chemosed. The nostrils were similarly greatly swollen and purulent. Cultures taken of the discharge and from the cat's fur showed that the same organism, the *Staphylococcus pyogenes aureus*, was present in both.

Recovery finally took place as the result of local treatment.

Case 2.—A boy, aged 14 years, who was in the habit of walking about with a Persian cat perched on his left shoulder and of cuddling it at irregular intervals, developed inflammation of the left eye and slight swelling over the left parotid. When seen by Lawson a fortnight after the onset the whole left side of the face was much swollen, and there was a brawny induration over the parotid, with the skin slightly reddened over the angle of the jaw. Extending into the neck and almost continuous with the parotid swelling was another indurated mass, evidently consisting of swollen glands. The lids of the left eye were considerably swollen, and on

eversion the conjunctival surfaces of both tarsi were seen to be fairly covered with coarse granulations, especially marked in the upper lid, where, near the fornix, there were some bunches of exuberant granulation tissue. The retrotarsal portions of both sacs were much chemosed, with great enlargement of the follicles, and a fairly abundant muco purulent discharge lay in the furrows of the swollen tissues. The bulbar conjunctiva was also considerably swollen and rather pink in colour. The cornea and all other structures were quite healthy.

The disease was treated by thorough cutting and scraping under an anæsthetic, finishing up by thoroughly swabbing out the upper and lower sacs with a 2 per cent. solution of silver nitrate. The glandular swellings at once began to subside, but treatment for about six weeks with argyrol, weak copper drops, and silver nitrate was necessary before complete recovery took place.

Examination of the scrapings showed *Streptococcus longus*, *Streptococcus brevis*, and *Staphylococcus albus*. The hair and skin of the cat were then examined, with the following results: The chief organism found in the hair was a *Staphylococcus albus*, whilst in the skin the most important organisms were *Streptococcus brevis* and *Staphylococcus citreus*.

Case 3.—A girl, aged 5 years, contracted a muco-purulent conjunctivitis of a mild type very shortly after nursing a favourite cat, which was a farmyard pet. In spite of treatment the conjunctivitis became chronic, and the submaxillary and sterno-mastoid glands on the same side became enlarged. When Lawson was called to see the child he found a mass of exuberant granulations occupying the greater part of the retrotarsal tissue and trespassing on the posterior edge of the tarsal plate. The clinical appearances, combined with the history and enlargement of the cervical glands, suggested the diagnosis of conjunctival tubercle, which was confirmed by bacteriological examination of sections from the local lesion and from the glands, the tubercle bacilli being of the bovine type.

Complete recovery followed removal of the infected parts and operation on the neck glands.

Philadelphia Pediatric Society.

April the 10th, 1917. The President, Dr. John F. Sinclair, in the Chair.

Non-specific Activity of Bacterial Vaccines.—Dr. John Kolmer.—Owing to the weight of laboratory investigations and evidence and the fundamental laws of specificity in immunity reactions, the therapeutic effects following the administration of a bacterial vaccine have been generally ascribed to the production and activity of specific anti-bodies, and any deviation from this current of thought has been generally received with a measure of scepticism and disapproval.

Since 1895, however, occasional laboratory and clinical reports have definitely indicated that a share of the good effects following the administration of a bacterial vaccine may be ascribed to certain non-specific and, as yet, ill-defined factors, among which the following may be mentioned: (*a*) Leucocytosis; (*b*) hyperpyrexia; (*c*) stimulation of antibody-producing tissues, and particularly the hæmopoietic organs; (*d*) mobilisation of

proteolytic and lipolytic ferments which, according to the investigations of Jobling and his colleagues, may hydrolyse toxic protein molecules into lower and non-toxic forms and attack the lipoid-protein envelope of bacteria, thereby rendering them more liable to destruction; and (*e*) increase the amount of anti-ferments in the body fluids, which may inhibit the growth of bacteria or prevent them from elaborating leucocidins, aggressins, or other substances used by the bacteria for their protection.

Aside from the good effects occasionally noted in the treatment of certain infections with bacterial vaccine prepared of bacteria having no ætiological relationship with the disease, the administration of a bacterial vaccine appears to protect the immunised individual in some degree against other infections; a profound and favourable influence upon metabolism, with increased elimination of waste and gain in body-weight, are occasionally noted, and these non-specific efforts tending to improve the general condition may be as important as the production and activity of specific antibodies.

Bacterial Vaccines in the Treatment of Diseases of the Skin.—Dr. Jay F. Schamberg stated that with the introduction of new therapeutic measures in medicine there is a tendency on the part of some practitioners to excessive enthusiasm and extravagant claims, while the group of conservatives remain sceptical to the point of incredulity. Scientific conservatism in medicine is a desirable quality provided it is not carried to extremes. Vaccines have been used extensively in diseases of the skin, but no positive and definite measure of their value have yet been determined. In furunculosis vaccines exhibit their most constant and definite beneficial value, but they are not to be used to the exclusion of other methods of treatment, inasmuch as the foci of infection, whether in the teeth, tonsils, or elsewhere, must be eliminated. Formerly, one depended on hygiene, proper food, and tonics to increase the defensive powers for the individual against pus infection. Vaccines specifically strengthen the staphylo-opsonins, and thus lessen vulnerability to infection. In carbunculosis good results are likewise obtained, although not as constantly as in the case of boils. There are forms of pustular dermatitis which are favourably influenced by the use of vaccines.

Dr. Schamberg exhibited two photographs, illustrating a very remarkable result obtained with the use of autogenous vaccine in a case of sycosis of five months' standing that had resisted all methods of treatment. Two injections sufficed to produce a cure, and the patient's opsonic index was raised from 0·6 to 0·1. In 18 days the condition was completely cured, and remained so permanently. The patient immediately began to take on weight, and gained about 40 lb. in 2 months. Another case of sycosis treated at the same time also showed improvement almost to the extent of cure. In a number of other cases the results were much less favourable. Dr. Schamberg called attention to the fact that in the two cases referred to there had been infiltration at the site of injection in one case, and the formation of an abscess in the other case which he believed to be due to incomplete sterilisation of the vaccine.

In acne Dr. Schamberg used a vaccine composed of a stock acne bacillus with the addition of autogenous cultures of the staphylococcus of the colon bacillus. This selection of organisms was based upon complement fixation studies which had been carried out on acne patients by Drs. Strickler, Kolmer, and Schamberg. They had found that, with the acne bacillus as

an antigen, positive complement fixations were obtained in 84 per cent. of acne patients. With the staphylococcus 64 per cent. of positives were obtained, and with the colon bacillus 63 per cent. The most logical vaccine would be one which was made up according to the individual complement fixation tests. The use of the ultra-violet rays, by inducing hyperæmia of the skin of the face, aided in bringing opsonin-laden blood to the area of infection. Dr. Schamberg had found acne stock vaccines to give disappointing results.

The use of tuberculin in lupus vulgaris and in other tuberculous skin infections had, in general, given disappointing results, although in certain cases of scrofuloderma striking improvement was exceptionally obtained.

In conclusion, Dr. Schamberg said that he had had far more failures than successes with vaccines in the treatment of skin diseases, but that occasional brilliant results encouraged him to use this method of treatment.

Use and Limitations of Vaccines in General Medicines.—Dr. M. H. Fussell.—The value of vaccines in human medicine is perhaps beyond estimation. The harm they have done is also a prominent feature in human medicine, not so much the harm they have done in any given case, or in any given series of cases, but because physicians are always ready and anxious to do what they can for their suffering patients.

It is the lack of accurate application of vaccine therapy, which seems to me is the harmful part of vaccine treatment in human medicine. The facts which must be borne in the mind of every practising physician in regard to vaccine therapy, are these:

(1) That vaccines are absolutely specific, that is, that a vaccine made from the bodies of a diphtheria bacillus are absolutely of no value in a disease caused by streptococcus.

(2) As a good working basis, the vaccine should be made from organisms obtained from the patient, that is, they should be autogenous vaccines.

(3) Every patient who receives vaccine treatment, should always have used the ordinary treatment which is considered proper for the condition.

The most useful application of vaccine in human medicine is in prophylaxis. Too much carelessness exists at the present time, both as to the manner of vaccination, and as to the care of the patient after he has been vaccinated. During the past year the writer has seen three cases of tetanus following vaccination, each one preventable, because they came from contamination of the vaccinated area after the patient had been vaccinated.

Next in value to the vaccination against smallpox, comes the vaccination against typhoid fever. On general principles, the use of vaccines in such a disease as typhoid fever, is contraindicated, and it seems to me that as yet their use is not to be recommended. In a disease like typhoid fever where the mortality rates differ so much in various series of cases, it is not entirely impossible to come to a positive conclusion as to the effect of this or that treatment, and enough cases have not been recorded to make the statistics of much value. It also seems to me that in such a disease as typhoid fever, where the patient needs all his defensive powers in order that he may not succumb to the disease, the use of such vaccines in the treatment of typhoid fever may be easily detrimental; reactions may be brought about by which the patient's resistence may be broken, and what might be otherwise a favourable case, may indeed be converted into a fatal one.

In a disease like rabies, where the mortality of the disease is about 100 per cent., anything which offers relief from this disease is a boon. Pasteur's vaccination against rabies has lowered the incidence of the disease to a very marked degree.

All observers are agreed that the use of vaccines in human medicine as a prophylactic is of the utmost value, and there is a consensus of opinions that in the therapeutic use of these preparations harm can be done, not only to the individual treated, but to the moral of physicians, who use a method which is potent occasionally, but which is very frequently not only harmful, but leads to haphazard methods of treatment In 1912, in the 'Journal of the American Medical Association,' Theobald Smith said of vaccine treatment: "From one of the most delicate problems, the injection of vaccines is being brought to the level of a patent medicine cure-all. Even with the greatest care in administration there is still plenty of empiricism bound up with the use of vaccines, as long as our knowledge of immunising and toxic qualities remains incomplete. The over-burdened physician is ready to substitute some other responsibility and authority for his own, and commercial interests are much too ready to assume it. It is invariably the rule in the proper treatment of any diseased condition to search for the cause and if possible remove it. Then treat the residual condition, if there be any, in such a manner as seems proper. The theory and practice of vaccination in infectious diseases is best carried out by making a culture from the site of the infection, and then having a vaccine made from that culture. This can be done where a laboratory is accessible, and always should be done where it is at all possible. In that way one is sure of at least using an organism which is at the seat of the lesion. However, every autogenous vaccine is not of necessity a specific. For instance, a vaccine made from the nose is not of necessity a specific against infectious rhinitis.

Tuberculin in the hands of the general practitioner may do harm to his patients rather than good. If it is desired to treat a tuberculous patient with tuberculin, he had better be put in the hands of one skilled in such work. There are certain useful applications for vaccines, however, in general medicine, among these, applications in skin diseases, described by Dr. Schamberg; in certain cases of middle-ear diseases, a properly prepared autogenous vaccine occasionally gives good results, but nothing is more unscientific and likely to lead to unfortunate failure than the indiscriminate use of stock-mixed vaccines in these cases of middle-ear disease.

It seems to me that the treatment of infectious colds with certain stock vaccines comes under dangerous and futile medications.

To conclude, then, autogenous vaccines in human medicine are practically prophylactic. They bear curative value in certain conditions like skin diseases and ear diseases and local suppuration and in some chronic conditions. It must never be forgotten, that a vaccine to be of any value or as a therapeutic agent, must be made of the same organism causing the disease in the affected individual, and this knowledge can only be obtained by careful cultural methods, applied to the diseased individual. Without this previous knowledge of the infecting organism, all use of vaccines is certainly to be interdicted.

May the 8th, 1917. The President, Dr. JOHN F. SINCLAIR in the Chair.

Congenital Unilocular Cyst of the Liver (Hæmangioma): Report of a Case with a Brief Review of the Literature.—Dr. HARRY LOWENBURG.—The patient was a male, aged 19 months. The chief complaint was abdominal distension, extreme general weakness, gradual emaciation and pallor. Both parents were aged 23 years, healthy and married three years. First pregnancy. No miscarriages. Both parents gave negative Wassermann reactions.

Previous history.—Only child. Delivery normal. Birth weight said to have been 8½ lb. Breast-fed up to five months. Mixed feeding from this time up to one year when it was weaned. Dentition inaugurated at eight months. Somewhat tardy in this respect as to further development. No other illnesses recorded except occasional colds and attacks of fever of short duration and one attack of tonsillitis.

History of present illness and physical examination.—The mother stated that the abdomen had always been large and that it seemed to be getting larger. The child was extremely pale. He had never seemed strong but yet never seriously ill. He was very weak. His fontanelle was open. His head was square. Head sweating was noted. He had never walked. His legs were thin. His intelligence was normal. His ribs were slightly beaded. Weakness had been progressive. He vomited occasionally. There was no jaundice, no œdema of feet. Pulse feeble and rapid. Respiration somewhat hurried. Passed plenty of urine. Mucosæ pale. Heart, lungs, and extremities negative. There was no adenopathy, nor were hæmorrhoids present.

The abdomen was enormously distended. The umbilicus pouched. A large firm mass which occupied almost the entire abdomen and which seemed to spring from the right side corresponding to the normal situation of the liver was felt. Its lower edge was firm and extended to the brim of the pelvis. Thence it skirted upwards towards the left and disappeared under the left costal margin. It was not sensitive to touch. Its surface seemed smooth. Fluctuation could not be demonstrated. There was fixed dulness in the flanks. The superficial veins were distended.

Four examinations of the urine presented a specific gravity varying between 1010 and 1030. Albumin was found in faint traces three times and there were a few hyaline casts and some epithelium and mucus. Bile was absent.

Blood.—Hæmoglobin (Talquist) 25 per cent. Reds 2,070,000, cells pale, no poikilocytosis; whites 8500. Polymorphonuclears 41 per cent., lymphocytes 52 per cent.; large mononuclears 6 per cent.; transitionals 1 per cent. The red cells were pale. The Wassermann test was negative.

The X-ray examination showed a large mass filling the entire right side of the abdomen down to the brim of the pelvis and also a good part of the left side. From its situation it suggested a tumour of the liver. Its outline corresponded practically to that made out by physical examination. From the varying degrees of intensity of the shadows throughout the mass, it suggested the possibility of cystic degeneration.

Diagnosis.—Congenital tumour of the liver, probably cystic in character.

Treatment and subsequent course.—Exploratory incision advised. Operation by Dr. John B. Deaver. The following notes were kindly sent by Dr. Bowers of the Mary Drexel Home, where the operation was performed:

"Incised upper right rectus. Large tumour presented. Tremendous cyst of liver filling entire right side. Tapped tumour with trochar and canula. Dark, bloody (changed) fluid removed. Tumour incised. Large amount of bloody fluid escaped. Walls of cyst one inch thick and did not bleed. Piece of wall removed and sent to laboratory. The cyst was unilocular. The walls were stitched to the abdominal wall and the cavity packed with gauze."

The following report was made by Dr. Pfeiffer, pathologist to the German Hospital:

"Fluid from cyst. Colour, dark red. S. Gr. 1018. Many red blood-corpuscles. No bile nor bile pigments. No bacteria nor parasites."

Examination of tissue from cyst wall.—Tissue friable, of brown colour. suggesting membranous lining.

Dr. Lowenburg then reviewed the literature that he had found bearing on non-parasitic cysts.

Case of Facial Paralysis possibly due to Brain Tumour.—Dr. E. W. Rodenheiser.—The patient was a coloured girl, aged 2 years, with a dull, listless expression, and was rather poorly nourished and developed.

She was brought to the hospital with a right-sided facial paralysis first noticed in June, 1916.

There was nothing definite in the family history. The paralysis involved all the facial muscles of the right side, the external rectus, the right side of the tongue and apparently some of the throat muscles.

The eye grounds were normal, ears negative. Patient had a vertical nystagmus of both eyes, internal strabismus of right eye, occasional swaying of the head and vomiting, apparently headache, and was quite irritable.

X-ray showed no intra-cranial tumour. Blood picture normal. Wassermann reaction negative. Spinal fluid was under no pressure, and normal on examination.

The course in the hospital showed a progressive general weakness until death seven weeks after admission.

The pathological findings were (*a*) Peritoneal adhesions; (*b*) tuberculous mesenteric glands; (*c*) tuberculoma of pons.

Some Features of Cerebro-spinal Meningitis in Children.—Dr. A. G. Mitchell and Dr. W. W. Falkener.—Since the first distinctly recognised epidemic in this country, over 100 years ago, the disease has been epidemic about every ten years, and more or less prevalent for the following three years.

Reserving for later discussion the examination of the spinal fluid, let us determine the symptoms and physical signs which should influence us to perform the diagnostic lumbar puncture. If the symptom-complex were always complete, diagnosis would be comparatively easy. Unfortunately, typical onset is not always definite and symptoms suggestive of meningeal irritation are not in sufficient evidence to be striking. Furthermore (and this point needs such emphasis that it will be dilated upon later), many of the symptoms are often absent, and certain others are not of diagnostic importance in infants. This is worthy of consideration when we know that about 50 per cent. of patients suffering from meningococcus meningitis are under five years of age, and 20 per cent. under one year of age.

Any acute infection in children may begin with the same train of symptoms which are due, in part at least, to the imperfectly developed and therefore unstable and more easily influenced nervous system of the child as

compared to the adult. This group of symptoms includes hyperpyrexia, vomiting, headache, convulsions, and mental disturbance as evidenced by drowsiness or delirium. Headache and convulsions are the two of this syndrome that might be expected to predominate in a disease that involves primarily the brain and spinal cord. Indeed, this is the case, and in most epidemics these symptoms are among the initial ones.

A careful study of the case histories of patients admitted to the Children's Hospital this year shows that the early symptoms were present in the following order: Fever, vomiting, drowsiness, convulsions, rigidity of the neck, headache, chill, tremor, and irritability. The frequent combination of fever and vomiting was notable.

The first examination reveals certain suggestive things to the careful observer. Two of the physical findings (hyperæsthesia and rigidity of the neck) have already been called to his attention if the child has an intelligent mother or caretaker. Even as early as a few hours after the onset other signs of cerebro-spinal irritation such as a positive Kernig's sign or inability to extend the leg on the thigh when the latter is flexed on the abdomen, and Babinski's phenomenon are frequently present in normal babies under eighteen months. Ankle clonus also may frequently be elicited in babies, although it certainly has pathologic significance if persistent.

A *tache cérébrale*, to be of value even as a concomitant physical finding, should be distinct and broad. Stroking of the abdomen in almost any baby will develop what might be called a mild or moderate tache.

Involuntary rigidity of the neck is, however, certainly not a normal finding in a child of any age, and is present in most cases of cerebro-spinal meningitis during the early stage.

There is great difference in the severity of the infection. Severe fulminating cases occur at the beginning and at the height of the epidemic. Some patients may die in such a few hours that they develop few symptoms except headache and then coma. Others may have such a mild infection as to develop diagnostic features observable only on close inspection. It should be emphasised that, in babies especially, the diagnosis is often difficult. We have seen three infants under 1 year of age, in whom the spinal fluid showed meningococci, whose only deviation from the normal consisted in a tense, bulging fontanelle, fever, and mental apathy.

To recapitulate them. The child on whom we are justified in performing lumbar puncture will present a certain picture consisting in abrupt onset; fever; almost certainly vomiting and rigidity of the neck and hyperæsthesia; mental apathy or irritability; perhaps convulsions or a chill; and, usually, if a baby, increased tension of the fontanelle. Additional symptoms should, of course, be looked for, but not waited for. Lumbar puncture, especially during an epidemic, may be called for with less evidence than the symptoms given above. This is especially true if the puncture can be done under strict aseptic precautions and with close observation of the effect of withdrawal of fluid, realising that it is a procedure not devoid of danger. "When in doubt, puncture" is an axiom which suggests itself when we consider the frequency of the occurrence of cases with extreme mildness of the symptoms present and absence of other well-defined symptoms.

The first fluid is to be very carefully studied, as the meningococci may not be found after the first serum injection given at this time. Its chief characteristics are—that it does not reduce Fehling's solution, contains albumin and globulin, has a cell-count decidedly increased over the normal ten to the cubic millimetre, and contains Gram-negative, intra- and extra-

cellular, biscuit-shaped diplococci. The demonstration of these organisms by smear (or culture) is the definite diagnostic *sine qua non.*

The use of the bacteriolytic serum has materially reduced the mortality, and has furthermore done much to lessen the unfortunate and distressing sequelæ in the survivors. It is undoubtedly not as specific as we could wish. Failure to cure depends mainly on two factors; the first of these—early administration—has already been mentioned. We can conceive of no better way of pointing out the moral of using the serum early than presenting Flexner's often quoted statistics: Injected before the third day, 14·9 per cent. mortality; injected from the fourth to the seventh day, 22 per cent. mortality; injected after the seventh day, 36·4 per cent. mortality.

The second cause for failure of serum therapy probably lies in the absence in the serum of sufficient antagonistic antibodies for the particular strain of meningococci infecting the patient. Gordon, in England, and others have done work to prove that the meningococcus is divided into, at least, four different strains, three of which are definitely agglutinable, and the fourth comprising a group of, as yet, unagglutinable organisms. This multiplicity of strains is obviated to a certain extent by the use in the preparation of serum of meningococci obtained from many different sources, and explains why, at times, change in the serum used is followed by beneficial results.

Persistence of fever, continued cloudiness or viscosity of the spinal fluid with failure to reduce Fehling's solution, meningococci still present in stained smear, and continued leucocytosis, all indicate the necessity of further treatment. Rigidity is one of the last symptoms to disappear, and its continuance does not in itself necessitate puncture or serum injection.

In conclusion, we wish to emphasise two facts which have impressed us during the last three months.

Cerebro-spinal meningitis is curable in direct ratio to the promptness of treatment with antimeningococcic serum.

While at all times we should be careful to examine thoroughly any sick child, signs of cerebral and spinal irritation are to be especially sought for at the first inspection, during periods of epidemics of cerebro-spinal meningitis. This is all the more urgent when the illness has been suddenly ushered in by high fever, unexplained vomiting, drowsiness, convulsions, or intense headache.

Exophthalmic Goitre in a Boy aged 13 years.—Dr. W. F. Johnston. The family and social history presented only two points—namely, that the father had died of pulmonary tuberculosis, and the only disease that the child had ever contracted was measles.

Five years ago bulging eyeballs were noticed. At this time the thyroid began to enlarge, and the boy complained of palpitation and dyspnœa. Examination revealed a fairly well-nourished child, whose expression was somewhat dull, but was modified by the prominence of the eyeballs. Mentality was somewhat impaired. The eyes were prominent. The pupils reacted equally to light and accommodation. There was widening of the palpebral fissure. The thyroid gland was symmetrically enlarged. Examination of the heart negative, and no increase in cardiac dulness. Pulse rate, 78. Hands showed a fine tremor.

Dr. Johnston said that, while this case was not so rare at the age of thirteen as it would have been at eight years when it first came under observation, it was rather unusual because of the patient's sex, since the disease was three times as frequent in girls as in boys.

The symptoms of Graves's disease were practically the same in the child as in the adult, and often resembled those of chorea. The disease was rarely fatal in childhood, and usually responded readily to treatment. The various therapeutic measures available aside from those mentioned were: X rays, galvanism, thyroidectin, adrenalin, and thymus extracts, and, in exceptional cases, surgical procedures are indicated.

Abstracts from Current Literature.

Surgery.

Points in the operative treatment of hare-lip and cleft palate (*'Glasg. Med. Journ.,'* 1917, I, *p.* 16).—**J. H. Nicoll** advocates early operation. In cases of simple hare-lip, operation may be advantageously done within the first few days of life. In cases of alveolar hare-lip, the first stage of the operation (that concerned with the cutting and wiring in position of the tilted or projecting intermaxillary bone) should be undertaken similarly early, and the second stage (that concerned with the soft tissues of the lip) whenever the union of the alveolus is complete. In cases of cleft palate also, the earlier operation is performed the better. Where hare-lip and cleft palate occur together, the hare-lip should be treated before the palate. The great source of failure in cleft palate operations is the lack of blood supply in the pared and opposed margins of the flaps. Union of the hare-lip, and particularly of the alveolar hare-lip, very materially increases the blood supply of the palate. In unilateral alveolar hare-lip the chief difficulty is to obviate the persistence of the flattened-out nostril. The temptation is to extensively undercut and "free" the ala and cheek, but a much better result ultimately is obtained if the flattening of the nostril is corrected in large degree by so cutting and wiring the intermaxillary that the tip of the nose and the nasal septum are distinctly distorted to the deformed side. In this way the flat nostril is closed, partly by displacing the inner (mesial) wall, and partly by displacing the outer (alar) wall. Much less under-freeing is necessary, and much less subsequent scar distortion occurs. In cases in which considerable under-freeing of ala, lip, and cheek is necessary, the subsequent contraction of the raw surface and its adhesion to the underlying bone tend to reproduce the flattening of the nostril and to render the lip immobile, board-like, and distorted during facial movements. These ill-results may be avoided by the insertion of tin-foil between the soft parts and the periosteum. Mucous epithelium lines the raw tissues opposed to the surfaces of the tin-plate, so that these do not adhere on its withdrawal, but form part of the buccal cavity. The median position of prolabial juncture should be aimed at. An oval tube worn in the nostril for several months has a remarkable effect in moulding the deformed nostril and preventing secondary flattening. Four excellent photographic illustrations are appended.

J. Allan.

Congenital hypertrophic spastic stenosis of pylorus and Rammstedt's operation (*'La Pediatria,'* 1916, xxiv, *p.* 257).—**H. K. Hirschfeld** describes three cases, aged 3, 3½, and 4 weeks, in which this operation was performed with successful result. Rammstedt's method is

to make a longitudinal incision into the muscle of the pyloric ring down to the mucous membrane without opening the orifice. The edges of the wound are not sutured, the pylorus is dropped back, and the abdominal wall closed. Hæmorrhage is slight and easily arrested. The operation is thus very simple and takes little time, and hence can be resorted to in infants whose general condition is unsatisfactory.

VINCENT DICKINSON.

Operative cure of congenital pyloric stenosis; thymic death (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 1543).—**J. L. Ransohoff** and **P. G. Woolley** report the case of an infant, aged 10 weeks, who had a Rammstedt operation successfully performed. Recovery was rapid and uneventful, but in the middle of the seventh month the child was found, without warning, dead in bed, the cause for which was an enlarged thymus. The authors draw attention to the association of an enlarged thymus with congenital pyloric stenosis. T. R. WHIPHAM.

Resection of an intussusception in a child of 7 months: Recovery (*'Med. Journ. Austral.,'* 1917, I, *p.* 30).—**P. L. Hipsky.**—Three weeks after the patient left the hospital where operation was performed sixteen days earlier, the child had gained a pound in weight. The case is very rare, considering the age of the child. F. R. B. ATKINSON.

Intestinal obstruction in children, with special reference to intussusception (*'New York State Journ. Med.,'* 1916, XVI, *p.* 357).—**E. W. Peterson** briefly refers to the causes (congenital and acquired) of intestinal obstruction in children. Intussusception is by far the commonest cause of acquired obstruction in early life, and 70 per cent. of all cases occur during the first year of life. Of rarer causes of obstruction the author has encountered one case of mesenteric thrombosis in an infant, with eighteen inches of gangrenous obstructed jejunum; one case of acute angulation and obstruction, caused by a congenital band running from the head of the cæcum to the jejunum; one case of plum-stone impaction producing obturator obstruction in a small girl who had eaten heartily of plums and had swallowed the stones; also a case of pressure obstruction from an abdominal abscess, probably arising from a suppurating mesenteric gland. He discusses the symptoms and differential diagnosis of intussusception, and emphasises the following points: (1) Intussusception in infancy presents a rather uniform and characteristic picture, and should be recognised without difficulty; (2) aerohydrostatic and mechanical measures can succeed in but a limited number of cases. Such treatment is not without danger; (3) early laparotomy, with manual reduction of the invagination, is the simplest, the safest, and the most successful method of treatment.

J. ALLAN.

An unusual case of intestinal intussusception (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 1548).—**F. A. Van Buren** reports the case of an infant, aged 5 months, who was admitted into hospital in a dying condition with signs of intussusception. No operation could be performed, and at the post mortem a double intussusception was found, of the ileum into the cæcum for a distance of about 10 cm., and of the distended descending colon over the collapsed sigmoid for about the same distance. It was

decided that the ileo-cæcal was the primary and that purgatives had produced the second. T. R. Whipham.

Umbilical polyp (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 965).—**H. R. Tarbox** reports a case of umbilical polypus or remnant of the omphalomesenteric or vitelline duct in a girl, aged 12 years. Since in these cases there is a possibility of the polyp being attached to a Meckel's diverticulum, or connected with one, with subsequent danger of intestinal obstruction, probably the wisest thing to do is to dissect down to the attachment with the intestine, and if a Meckel's diverticulum is found, to tie it off at the intestinal junction. T. R. Whipham.

Metastatic abscesses following acute suppurative appendicitis (*'Arch. de Méd. des Enf.,'* 1917, xx, *p.* 143).—**A. Androutsellis.**—Death in acute suppurative appendicitis is almost always due to acute septicæmia from localised suppuration, and metastatic abscesses as in the following two cases are rare. Case 1: Boy, age not stated. Onset of appendicitis September 13. Operation September 25. Abscess in soft parts of right thigh September 29. Similar abscess in right arm September 30. Death October 1. Case 2: Boy, aged 9½ years. Onset of appendicitis January 24. Operation January 30. Abscess over upper end of left tibia February 3. Death February 5. No autopsy could be performed in either case, so that the presence of visceral infarcts could not be ascertained.

J. D. Rolleston.

Extreme fæcal impaction (*'Journ. Amer. Med. Assoc.,'* 1917, lxix, *p.* 283).—**E. A. Watson** reports the case of a girl, aged 13 years, who was born with an imperforate anus, the rectum opening into the vagina. She was operated upon when eight years of age, and the anus was established in the normal position. When seen the patient had a large tumour in the abdomen, which was diagnosed as a uterine fibroid, but at operation was found to be a fæcal impaction. Altogether 8¾ lb. of fæcal matter was removed. The patient died seventeen days later. T. R. Whipham.

Diaphragmatic hernia (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 1692).—**G. F. Koehler** reports the case of a girl, aged 12 years, who, two years previously, had an empyema on the left side. She presented signs of a gastric ulcer, which was successfully operated upon. Three months later she suddenly began to vomit and have attacks of sharp pain in the epigastric region, and radiating into the left chest. X-ray plates showed the presence of a diaphragmatic hernia. At the operation the stomach was almost entirely within the thorax, being twisted on itself, and the omentum was adherent to the pericardium. Several costal cartilages had to be cut through before the parts could be reduced. The patient made a good recovery. T. R. Whipham.

A case of diaphragmatic hernia (*'Am. Journ. Dis. Child.,'* 1917, xiii, *p.* 252).—**T. C. McCleave.**—A baby, aged 3½ months, had been subject since a fortnight after birth to recurrent attacks of cyanosis, dyspnœa, and severe pain, relieved by a motion or the expulsion of gas. The attacks became increasingly severe, and when seen by the writer the infant was almost moribund. The heart was found far over on the right side of the chest, breath sounds were audible only over the upper part of the right

chest, and the abdomen was much retracted. A skiagram showed the presence of gas in the left side of the thorax. A diagnosis of probable diaphragmatic hernia was confirmed by a skiagram taken after a barium enema. A third skiagram taken after a barium meal showed almost all the intestine above the diaphragm. Operation was performed a few days later, when an oblique slit about 1 in. long was found in the diaphragm close to the penetration of the great vessels and œsophagus. The intestine was replaced, and the defect closed. The baby died a few hours after the operation.

J. D. Rolleston.

Abdominal hæmorrhage of ovarian origin (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 1160).—**E. Novak** reports the case of a girl, aged 15 years, who was suddenly taken ill with symptoms suggesting appendicitis, the only point against that diagnosis and indicative of internal hæmorrhage being the patient's marked pallor. At the operation a large intraperitoneal hæmorrhage was found, the source of which was a small follicular cyst in the right ovary which had ruptured. At the same time a small ectopic pregnancy of long standing was discovered in the left tube. As the patient's condition was critical the cyst cavity was merely sewn up. A good recovery resulted.

T. R. Whipham.

Oxycephalus (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 1979).—**A. J. Bedell** describes three cases of oxycephaly, one of which, a boy, aged 8 years, was operated upon, a large subtemporal decompression being made on the right side. The patient died in a few hours, but nevertheless the author considers that the condition is amenable to surgical relief. He has only been able to find records of six other cases having been operated upon, but with what results he does not state.

T. R. Whipham.

A ganglioneuroma of the spheno-maxillary fossa (*'Glasg. Med. Journ.,'* 1915, ii, *p.* 98).—**J. S. Dunn**.—The patient from whom the tumour was removed was a boy, aged 3 years, who had previously been quite healthy. Three weeks before operation swelling was first noted on the right temple, just behind the frontal process of the right malar bone. It was apparently of the size of a marble, and had a cystic feeling. At the operation it was found that the tumour was entirely covered by the temporal muscle, and when the latter was withdrawn it was seen to be encapsuled. When removal was attempted it was found that the tumour lay directly on the bare bone of the wing of the sphenoid, there being no intervening periosteum. The upper part was separated off readily enough, but a prolongation was found to extend downwards into the spheno-maxillary fossa. This part was ligated as low as possible, but the tumour could not be removed intact. It was remarked after removal that there had been a fairly complete capsule. The contents resembled grey matter of the brain. The microscopical examination and results are detailed in full. The exact origin of the tumour could not be determined, in absence of a more complete dissection. The nearest ganglionic structure would be the spheno-palatine ganglion, in relation to the superior maxillary division of the fifth cranial nerve. This ganglion, like all the others on cranial nerves, contains elements belonging to the sympathetic nervous system, a fact which would be so far in favour of attributing the tumour to that origin.

J. Allan.

Intracranial telangiectasis (*'Am. Journ. Med. Sci.,'* 1915, CL, *p.* 565).—**E. Sachs** operated on two cases in boys, each aged 10 years. One died and the other improved, though it was too early to express an opinion as to the ultimate result. The clinical symptoms are quite definite, viz., (1) attacks of Jacksonian epilepsy occurring at long intervals in non-syphilitic young persons; (2) unconsciousness of long duration; (3) no evidence of increased intracranial pressure; (4) a very slow progress of symptoms; (5) telangiectases on the head and face. J. D. ROLLESTON.

Apparent recovery after operation for cerebellar tumour (*'Arch. of Ped.,'* 1915, XXXII, *p.* 727).—**Langley Porter** describes a case in a schoolgirl, aged 11 years. Mid-frontal and vertical headache was first complained of. On examination lateral and rotatory nystagmus was found. The gait was ataxic, with a tendency to fall towards the right. There was marked inco-ordination of the right arm. The discs were swollen to the extent of $3\frac{1}{2}$ to 5 diopters. The chin was held towards the right shoulder. The Wassermann and luetin reactions were negative. There were no signs of tuberculosis. A right cerebellar tumour was diagnosed. The operation was performed in two stages at a week's interval. A trocar introduced into the right cerebellar lobe met with marked resistance, and further investigation disclosed a cyst measuring 4·8 cm. in diameter occupying the position of the nucleus dentatus. The cyst was opened and was found to contain clear fluid. As cysts are usually benign the cyst was removed. Three days after operation the nystagmus and headache had disappeared. Three weeks later the staggering gait had disappeared, and in three months after the operation the discs were normal and vision good. C. ROLLESTON.

Hereditary deforming chondro-dysplasia; multiple cartilaginous exostoses (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 502).—**A. Ehrenfried** reviews the American literature on this subject, which is somewhat meagre, and includes only seventy-one recorded cases. To these he adds twelve of his own, and concludes that hereditary deforming chondro-dysplasia can no longer be considered a rare affection in America. The disease is a distinct clinical entity, whose manifestations are now well defined. The work which has been done on its pathology points definitely to a disturbance in the bone-forming cartilage as the underlying cause. The hereditary nature of the disorder, which has been demonstrated, gives it an individuality which makes investigation interesting.

T. R. WHIPHAM.

Congenital kyphosis (*'Edin. Med. Journ.,'* 1916, I, *p.* 93).—**D. M. Greig** describes a case of congenital kyphosis associated with a cervical rib and a congenital high scapula in a child aged $2\frac{1}{2}$ years. Brief references are made to other recorded cases somewhat similar in nature.

J. ALLAN.

Congenital superior radio-ulnar synostosis (*'Edin. Med. Journ.,'* 1917, I, *p.* 281).—**D. M. Greig** records a case in a boy, aged 4 years, born of British parents in the colonies. There was nothing unusual about the birth, and the child appeared to be normal, but an hour or two after birth took a severe fit. He was late in walking and very late in talking, and is now obviously mentally deficient. Physically he is fairly developed. He is restless and talkative, devoid of shyness, and articulates so badly that

a stranger cannot understand what he says. He has tight epicanthic folds, that on the right being more marked than on the left. He has narrow anterior nares and a high palate, and an under-hung lower jaw. He has some facial paralysis of the left side, so that when he opens his mouth the lips on the left side droop. There is some paresis of the left orbicularis oris. The left pinna is rather smaller, and the concha is larger and more simple than on the right. He has a curious warty rash on the face, and pink erythematous hands. He walks downstairs like an infant, and does not seem to use his left leg as he does his right. Both forearms are fixed midway between pronation and supination, and any deviation from this position cannot be effected. A radiograph shows fusion at the upper extremity of the radius and ulna, while the lower radio-ulnar articulations appear normal. Operation is precluded in this case, because of the mental deficiency, and in any case operative interference is seldom satisfactory. A bibliography is appended.

J. Allan.

Fracture of the forearm in children (*'Interstate Med. Journ.,'* 1917, xxiv, *p.* 547).—**J. Grossman** states that Colles' fracture occurs rarely in infants and children. Where, for any length of time, infants and children refuse to use their forearms, after having sustained an injury, fracture should be suspected. Fractures may be present even though the cardinal signs of fracture, crepitus, false mobility, deformity, are absent These fractures are usually of the subperiosteal variety. "Pencil" tenderness—*i. e.* tenderness localised at the site of the fracture, is the diagnostic feature in these cases. Epiphyseal separation of the radius occurs with fair frequency. This should be looked for in all cases with injured forearms, and undoubtedly will be found more often. Plaster-of-Paris bandages are far more efficient than splints, and should be employed in all cases of fracture. Proper immobilisation is as important as proper reduction in order to obtain a successful issue. Shorter periods of immobilisation, early massage, and passive movements should be employed in treating fractures occurring in children.

T. R. Whipham.

An unusual fracture of both bones of the leg (*'Journ. Amer. Med. Assoc.,'* 1916, lxvii, *p.* 1293).—**C. Ryttenberg.**—A boy, aged 5 years, was knocked down by a glancing blow from the mudguard of a motor-car. He complained of pain above the left ankle and refused to stand on the leg; otherwise there were no signs of injury—no swelling, no ecchymosis, and no crepitus. A fracture was not diagnosed until an X-ray plate showed an oblique incomplete fracture of the tibia in the lower third, extending from the inner side upward and outward to within an eighth of an inch of the outer side, and a greenstick fracture of the fibula.

T. R. Whipham.

Orthopaedics.

Prevention and treatment of the deformities in anterior poliomyelitis (*'Med. Rec.,'* 1915, lxxxviii, *p.* 439).—**J. Grossman.**—To prevent foot-drop, the foot should be kept at right angles to the leg by resting the soles against a box covered with a blanket and placed against the foot of the bed, or by the use of a Volkmann's splint or plaster of Paris bandage. The latter treatment applies also to the knee and hip. After the tenderness is gone, massage daily for fifteen minutes, electricity (static) 5–10 minute

séances thrice weekly, and muscle-training should be employed. Passive movement should be adopted first, followed by the same movement against slight resistance. Fixed deformities should be overcome by forcible stretching and then application of plaster of Paris bandages or splints. If the contracture be too powerful, tendon lengthening or myotomy with subsequent bandaging should be adopted, followed by operation. In cases of lateral curvature of the spine, forcible correction and retention by a Kleinberg brace or Abbot jacket is the best treatment. Operations are performed to correct any deformity, to improve the muscle function by transplantation of a sound muscle or tendon and should not be undertaken under two years after the onset of paralysis, and to secure stability of useless joints. Arthrodesis is one of the methods used and should not be done in children under 14 years of age. Astragalectomy has given good results. Osteotomy is often of value, and in foot-drop the silk ligament suspension operation is of especial use. Nerve-grafting has given encouraging results. F. R. B. Atkinson.

Prevention and limitation of deformity in infantile paralysis (*'Therap. Gaz.,'* 1916, xxxii, *p.* 687).—**A. Cohn** reaches these conclusions: (1) Importance of early and proper diagnosis; (2) advisability of consultation with an orthopædist; (3) value of lumbar puncture as an early procedure; (4) importance of absolute rest; (5) value of muscle training and muscle re-education; (6) massage, hydrotherapy, electricity and baking are of benefit when properly co-ordinated and carried out jointly with one another; (7) necessity of the physician being able to give proper instructions when desiring to have a brace made; (8) necessity of proper care of braces under physician's observation; (9) operative procedures as last resort after waiting several years, or because of lack of treatment or improper treatment; (10) muscle and tendon transplantation is the operation of choice wherever possible. J. Allan.

Surgical treatment of anterior poliomyelitis (*'Med. Journ. Austral.,'* 1916, ii, *p.* 429).—**W. Kent Hughes.**—*Acute stage:* Absolute rest. The body and legs should be lightly bandaged to a double Thomas' splint, with head and arm extensions. All the muscles should be placed in a position of physiological rest. *Final stage:* Tendon transplantation. The operation is described. F. R. B. Atkinson.

The operative treatment of brachial plexus paralysis (*'Journ. Amer. Med. Assoc.,'* 1916. lxvi, *p.* 876).—**W. Sharpe**, in a long paper, advises that in cases of total paralysis of the arm operation should be undertaken when the child is 1 month old for the following reasons: (1) The child will stand the operation at that age better than at an earlier date, and as well as at any time several months later. Little, if any, anæsthesia need be used, and in most operations on children under 1 year of age the danger of the anæsthetic is the greater risk; (2) the earlier the anastomosis of the nerve-roots the more perfect the union of the nerve-fibres, and consequently, a greater improvement ultimately; (3) the earlier the operation the less the formation of fibrous tissue; (4) at the age of 1 month there is little or no retraction of the nerve-ends. T. R. Whipham.

The results of cranial decompression in selected types of cerebral spastic paralysis due to hæmorrhage (*'New York State Journ. Med.,'*

1916, xvi, *p.* 475).—**W. Sharpe** reports on the operative treatment of 219 selected cases (out of 954 cases) of spastic paralysis showing intracranial pressure both by an ophthalmoscopic examination and the measurement of the pressure of the cerebro-spinal fluid at lumbar puncture. Operation is only undertaken in those cases of spastic paralysis giving a history of difficult labour with or without instruments, and upon opthalmoscopic examination, the definite signs of increased intracranial pressure are to be seen upon the fundus of the eye, and confirmed by the measurement of the pressure of the cerebro-spinal fluid at lumbar puncture, *i. e.* only those cases of spastic paralysis which show definite signs of increased intracranial pressure, whether this condition is associated with impaired mentality or whether the size of the head is unusually small or unusually large; if, in these latter cases, there is an increased intracranial pressure, then that pressure should be relieved in the hope that the spasticity will be lessened, and the mentality be improved. Naturally, the most satisfactory and desirable patients for operation are the ones with no impairment of the mentality, but these patients are rare when there is intracranial pressure present; much more commonly do we find a more normal mentality in those cases of lack of development and malformation of the pyramidal tracts, unless very extensive. Further details regarding the cases selected and the method of procedure adopted are given. The after-treatment consisted of the routine orthopædic treatment which the patients had had before the operation; the correction of deformities by tendon lengthenings, or merely stretchings of the contracted muscles, the maintenance of corrected positions through the employment of specially adapted braces, and skilled massage, particular attention being given to the weakened and over-stretched muscle groups; the usual systematic course in muscle training has been carried on as before the operation. The results from cranial decompression have been satisfactory—not only as regards a lessening of the spasticity, but as regards a definite amelioration of the mental condition of the patient. The operation is by no means a cure, and possibly the improvement in the selected cases is only a temporary one. But from the pathology of these selected cases operated upon and the general continuous improvement which has resulted and is still progressing, the author feels justified in making a report in the hope that it may throw some light upon the treatment of this very pitiful condition. J. Allan.

Scoliosis accompanied by pressure paralysis of the lower limbs (*'Journ. Amer. Med. Assoc.,'* 1916, lxvii, *p.* 803).—**J. Ridlon** reports two cases in which a motor spastic paralysis of the lower limbs was associated with, and apparently depended upon, scoliosis. The paralysis in both cases was similar to that seen in tuberculous spondylitis. The first case was a girl, aged 11 years, in whom a spinal curvature had been noticed for some time. There was a marked lumbar curvature to the right, with considerable rotation, and a slight dorsal curvature in the opposite direction, which showed a marked rotation deformity on bending forward. The patient was treated by daily exercises, and a leather corset over a plaster torso. At the end of a year a skiagram showed that the curvature had increased, and a year later the gait was spastic, especially in the right leg, the reflexes were exaggerated, and ankle clonus and the Babinski's sign were present. The patient was placed on a convex gas-pipe stretching frame, and at the end of four months the reflexes were normal, the spine straighter, and the paralysis had disappeared. The second case was a girl, aged 16 years. She had at

birth a spina bifida in the upper dorsal region, which was treated with iodine injections. She had never been strong, and there was a destruction of the bodies of the fourth to seventh dorsal vertebræ, with marked curvature to the left as well as antero-posteriorly. A poroplastic cast and extension were applied, but the legs became paralysed and spastic. A gas-pipe frame was then employed, and at the end of six months the patient had regained voluntary control of the legs, but the reflexes continued exaggerated.

T. R. WHIPHAM.

The evolution of osteochondritis deformans coxæ juvenilis (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p.* 658).—**A. H. Freiberg** reports two cases of this disease which is apt to be mistaken for tuberculosis of the joint. The affection begins usually prior to the 8th or 9th year of life with a characteristic flattening of the capital epiphysis of the femur and develops in adolescence into a mushroom deformity of the upper end of the femur It appears to be a chronic infectious process of a secondary nature, the primary focus being possibly the tonsil. It is probably a mistake to assume that because the symptoms are of a mild character and recovery with good movement of the joint may be expected, mechanical protection is unnecessary or unimportant. There is reason to believe that the terminal deformity is due to weight-bearing and motion as much as in tuberculous disease. So far no cases have been continuously followed by Röntgen-ray observations for a long enough time to determine what the truly terminal deformity really is, or to what extent it may change during the later years of adolescence and in adult life.

T. R. WHIPHAM.

Treatment of tuberculosis of the joints (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 282).—**R. E. Humphries** and **H. A. Durham** find that the regions most frequently involved in joint tuberculosis in order of frequency are the spine, hip joint, knee joint and ankle joint. The disease is more frequent in boys than in girls. The disease affects the joints of the right side more frequently than those of the left. The average duration of treatment of all joint disease patients was six and a half years. Joint tuberculosis is usually well advanced before diagnosis is made, the average duration of the disease on admission being one and a half years. The average age of patients when admitted for treatment was six and one-fourth years. Ankle joint disease can be cured in most instances with little or no deformity. Of the knee joint cases seen, 15 per cent. had more than 1 in. shortening; 25 per cent. had ankylosis; 75 per cent. had more than 15 degrees motion from full extension; 38 per cent. had more than 90 degrees motion from full extension. Of the hip joint cases cured, 34 per cent. had less than 1 in. shortening; 24 per cent. had varying degrees of flexion and adduction deformity; 28 per cent. had bony or fibrous ankylosis; 55 per cent. had none or only partial destruction of the heads of the femora; 55 per cent. had more than 15 degrees flexion from full extension; 9 per cent. had some degrees of relaxation of knee joint. In Pott's disease the dorsal region is much more frequently involved than all the other regions combined; 73 per cent. of all cases of Pott's disease had perceptible increase of deformity during the course of treatment. Of the patients operated on, 20 per cent. had some increase in deformity following the operation, but in no case was there actual increase in deformity of the area operated on.

T. R. WHIPHAM.

Ophthalmology.

Diphtheria of the conjunctiva (*'Brazil-medico,'* 1916, xxx, *p.* 219). —**N. da Rocha.**—A girl, aged 2 years, presented considerable palpebral œdema of the left eye, especially of the upper lid. The conjunctival secretion was scanty and serous. The mucosa of the upper lid was covered by a yellowish-grey membrane, the bulbar conjunctiva was much injected, the cornea was intact. Owing to the hardness of the œdema and the absence of purulent secretion a diagnosis of diphtheritic conjunctivitis was made, but for the first four days treatment was confined to local irrigations with boracic lotion and saline solution. The palpebral œdema considerably increased, the membrane became thicker, the bulbar conjunctiva became chemotic, and the cornea hazy. Rapid recovery followed antitoxin treatment, the serum being applied locally as well as being injected. The general condition remained good throughout, and no other diphtheritic lesions were noted. Cultures of the conjunctival membranes were at first negative, but later a pure growth of diphtheria bacilli was obtained.

J. D. Rolleston.

A corneal ulcer produced by varicella (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 1476).—**J. S. Wyler** reports the case of a girl, aged 5 years, who during an attack of varicella developed a large ulcer on the cornea which was evidently due to the eruption of a pock in that situation. The ulcer showed no tendency to spread and healed slowly, and there were no other signs in the eye itself. The writer has only been able to find one other similar case.

T. R. Whipham.

Infection of the conjunctivæ in children (*'Med. Press,'* 1917, i, p. 150).—**A. Lawson,** at the Section of Ophthalmology of the Royal Society of Medicine, read notes of three cases in which serious infection of the conjunctivæ in children was traced to pet cats, which the children fondled, often burying their faces in the fur. The organisms answerable for the conditions found were *Staphylococcus pyogenes aureus, Streptococcus longus, Streptococcus brevis, Staphylococcus albus,* and in a case in which the cat distributed its favours between a child and the denizens of a neighbouring farm, bovine tuberculosis. In each case cultural proofs were established.

J. Allan.

Notes on some cases of metastatic meningococcal infection of the eye (*'Med. Journ. Austral.,'* 1917, i, *p.* 101).—**E. T. Smith** describes five cases in four of which all the signs of cerebro-spinal meningitis were present and in one they were absent. One child died. Muco-purulent discharge was found in the eye in all the cases.

F. R. B. Atkinson.

Three cases of meningococcal irido-choroiditis (*'Arch de Méd. des Enf.,'* 1917, xx, *p.* 189). –**M. Lavergne** reviews the literature, including the recent thesis by Gaudin (*vide* British Journal of Children's Diseases, 1916, xiii, p. 318), and records three cases from Marfan's clinique in children aged 5 years, 13 months, and 11 months respectively. In the first case, in which the complication developed on the sixth day, injection of serum into the vitreous did not bring about a complete cure, but seemed to arrest the process. In the second case, in which the complication developed on the second day of disease, intrathecal and intraocular injections were ineffective, and death took place on the sixth day of disease. In the third

case the choroiditis developed on the third day. The child survived, but two injections of serum into the vitreous did not produce any change in the local condition. J. D. Rolleston.

Meningococcal cyclitis and irido-choroiditis (*'Arch de Méd. des Enf.,'* 1917, xx, *p.* 194).—**H. Collette** records a case of each: (1) Girl, aged 5½ years, admitted to hospital on the eleventh day of cerebro-spinal meningitis. Rapid recovery after two injections of antimeningococcal serum. Left cyclitis in convalescence a fortnight after the onset. Considerable diminution of vision and slight atrophy of the eye. (2) Girl, aged 6 years, admitted to hospital on the sixth day of disease. Right irido-choroiditis on seventh day. Rapid loss of vision and atrophy of eye. Removed from hospital by parents in dying condition.

J. D. Rolleston.

Dacryocystitis complicated by purulent meningitis and phlebitis of the cavernous sinuses (*'Arch. de Méd. des Enf.,'* 1917, xx, *p.* 254).—**Condat** records a fatal case in a boy, aged 12½ years, in whom the causal agent was probably the streptococcus. A remarkable feature of the case was that the thrombosis of the cavernous sinus first developed on the opposite side to the dacryocystitis. J. D. Rolleston.

The diagnostic value of tubercle of the choroid (*'Lancet,'* 1916, ii, *p.* 472).—**Sydney Stephenson** points out that it is well to remember that the discovery of tubercle of the choroid may enable us to diagnose not only diseases of the central nervous system but the tuberculous nature of lesions of other parts of the body. In one condition, indeed, acute tuberculosis, it is the sole pathognomonic sign. Brief histories of three cases are given. Case 1: Male, infant, aged 1 month, admitted to hospital as case of apical pneumonia, but recognised as general miliary tuberculosis by the finding of tubercles in the choroid; necropsy; tuberculous nature of the choroidal lesion confirmed microscopically. Case 2: Girl, aged 6 years, admitted for (?) appendicitis; exploratory abdominal incision revealed tuberculous peritonitis; finding of tubercle of choroid led to diagnosis of acute tuberculosis; death. Case 3: Girl, aged 3 years, admitted as case of lobar pneumonia; diagnosis of typhoid fever thought more likely in hospital; the discovery of tubercle of the choroid, however, led to diagnosis of acute tuberculosis, from which the patient succumbed; necropsy; examination of the choroidal tubercles demonstrated the usual histological characters tubercle bacilli being unusually numerous in some of the "giant-celled systems." J. Allan.

The selective action of spirochætes (four cases of familial ophthalmoplegia interna) (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii., *p.* 963).—**M. Grossman.**—The following cases came under observation two and a half years ago. The father had suffered from spastic hemiplegia and a number of convulsive seizures for about sixteen months, and his speech had become affected. His wife had had three miscarriages, which were followed by the birth of four children, now aged 13, 11, 9, and 7 years. The man's pupils were irregular, unequal, and did not react to light, though there was a sluggish reaction to accommodation. Examination of the blood and spinal fluid revealed a + + + + Wassermann reaction. His wife's vision was failing, and at one time she had had a fleeting attack of diplopia. She

had unequal, irregular pupils, which were almost completely fixed to light and reacted sluggishly to accommodation. Her blood Wassermann was + + + +. The oldest child had had snuffles and an eruption at birth, which lasted about one month. He had always been nervous and irritable and considered below par mentally; otherwise the history was negative. The third child had an eruption at birth, but no snuffles. At the age of 7 he had an attack of convulsions, which were followed by spasticity and dragging of the lower extremities. The second child and the fourth child each gave a negative history. In the oldest, second, and fourth children the pupils were widely dilated, unequal in size, irregular in outline, and did not react to light, accommodation, convergence or the instillation of physostigmine salicylate (a 1 per cent. solution) into the eye. The third child, in addition to these pupillary disturbances, had an active nystagmus, bilateral Babinski phenomenon, bilateral inexhaustible ankle clonus, increased knee and ankle jerks, and a well defined spastic gait. He also had about two diopters of swelling in the optic nerve heads. The teeth in the three older children, although not typically Hutchinsonian, were highly suggestive. The blood Wassermann was + + + + in the third child, doubtful in the two older children, and negative in the youngest. The second series of Wassermann reactions were made six months after the children had been receiving treatment, and were + + + + in all of the children. Antisyphilitic treatment has been continued for two and a half years. The father's condition has remained unimproved, while the mother's condition is somewhat better. She still suffers from an occasional headache; but increasing the iodide promptly relieves her. Her vision still remains poor, although there has been no further loss in the past two years. The second and fourth child's pupils react promptly to physostigmine, convergence, and accommodation, but are still a little sluggish to light. The oldest child shows slight return of the reaction to physostigmine, less to convergence, and no return of reactions to accommodation or light reflex. The third child shows slight improvement in his gait and nystagmus. The papillary œdema has cleared up entirely. The pupillary phenomena, knee jerks, ankle clonus, and Babinski, however, remain unchanged. Later observations show that the father has developed frank paretic symptoms. In the oldest child the pupils have again become completely immobile. He has developed marked weakness of the lower extremities, bilateral Babinski reflex, bilateral ankle clonus, increased knee and ankle jerks, and a slightly spastic gait.

T. R. Whipham.

Clinical report of 9 cases of amaurotic family idiocy (*'Arch. of Ped.,'* 1917, xxxiv, *p.* 161).—**J. H. McHenry.**—As all came to the clinic in so short a period of time (15 months), and so few (about 150) are on record, the writer concludes that either many cases are not reported or are not diagnosed. All the symptoms point to a congenital disease and not to an acquired condition. Increased intracranial pressure was noted by lumbar puncture in all the cases in which it was performed. All occurred in Hebrew families, and all were fatal within 2 years.

J. D. Rolleston.

Acrocephaly (*'Amer. Journ. Dis. Child.,'* 1917, xiii, *p.* 61).—**P. Lewin** reports two cases of this condition, which is also known as turmschädel, steeple head, turret skull, turritum caput, and *tête à la Thersite*, in a boy aged 6 years and a girl aged 14 years. When combined with deformities

of the hands, the term acrocephalosyndactylism is used (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, xii, p. 315). The ætiology is obscure. The most probable cause is a premature ossification of the cranial sutures. The striking features of the case are the deformity of the skull and the exophthalmos. Optic atrophy is the most constant ophthalmological finding. Dislocation of the eyeball is not uncommon. Divergent strabismus is frequent, and nystagmus is found in most cases. The prognosis as to life is good, as to improvement very poor. Treatment of any kind is unsatisfactory. J. D. ROLLESTON.

On fragilitas ossium and its association with blue sclerotics and otosclerosis (*'Edin Med. Journ.,'* 1917, i, *p.* 240).—**E. Bronson** gives a description of two families with hereditary fragility of the bones associated with grey-blue sclerotics, and in the first family with otosclerosis also. A summary of the literature of these peculiarities in relation to fragilitas ossium is presented, together with a general discussion of the whole subject case reports of the congenital type, and a bibliography. The main facts of the two families are summarised as follows: (1) In the *first family*, consisting of fifty-five individuals in four generations, twenty-one had grey-blue sclerotics. (2) Of these twenty-one, only one, a six-year-old boy, who survived infancy, has had no fractures. The number of fractures in any individual is not excessive, and they require a certain amount of force for their production. Sprains and dislocations are also common. The majority of adults are in good general health, and are able to do ordinary work. The mortality among infants with blue sclerotics is in this family greater than among those not affected. (3) The heads of those individuals in this family who have blue sclerotics and bone fragility show an abnormal prominence of the frontal and occipital bones. In two of them there is a history of patency of the fontanelle throughout life. (4) Of eight adults with blue sclerotics and fractures, seven had varying degrees of deafness, the eighth died at 23 without deafness. (5) In the *second family*, consisting of eight individuals in three generations, seven have blue sclerotics, and four of these have had fractures, two others have a tendency to sprains. All are able to lead an ordinary life, except one child, who is somewhat crippled and incurs fractures too easily to be able to run and play. (6) In this family the head has the characteristic shape frequently seen in osteogenesis imperfecta congenita, namely, increase in the bitemporal diameter, so that the ears are turned outwards and downward, slight downward tilting of the axis of the eyes, and an underhung lower jaw. (7) There is no tendency, as in the first family, to deafness, nor is there any arterial sclerosis. (8) In both families the stature of the affected individuals is below the average, with the exception of three members of the first family. The following summary of isolated cases and general discussion is appended: (1) Cases 1 and 2 are fairly typical examples of osteogenesis imperfecta of prenatal onset. They both have had numerous fractures without violence since birth, and both show signs of imperfect ossification of the cranial bones. Case 3 illustrates fragility of the bones of postnatal onset, but a shape of head which also suggests softness in earlier life of the cranial bones. (2) The terminology is varied. Probably Looser's terms—osteogenesis imperfecta congenita and osteogenesis imperfecta tarda—are the most satisfactory. (3) The ætiology is unknown. The hereditary factor is present in only a limited number of cases. (4) Clinically the condition is characterised by defective cranial ossification and by numerous fractures without violence.

The earlier the onset the greater is the liability to fracture. Dislocations also occur. Blue sclerotics may or may not be associated. (5) A limited number of metabolic studies indicates an increased loss of calcium. (6) In both prenatal and postnatal onset of symptoms pathological findings indicate a deficient functional activity of the osteoblasts. In respect to other abnormalities writers disagree.

J. Allan.

Idiopathic dislocation of the eyeball ('*Edin. Med. Journ.*,' 1917, I, *p.* 129).—**D. M. Greig** describes a case in a female infant aged 11 months, who had been referred to him on account of what appeared to be a congenital proptosis. The projection of the eyeball was found to be present only during fits of crying, and in crying the whole voluntary muscles were thrown into a state of convulsive movement. The eyeballs were protruded to such an extent that actual extrusion appeared imminent The contraction of the orbicularis palpebrarum on each side was excessive, and the upper limit of these muscles, along with the corrugator supercilli, formed a fleshy torus across the forehead, and a ring round each orbit. It was slightly more marked in relation to the left eye. If the fit of crying was more violent than usual or with the slightest touch on the outer canthus the left eyeball would be protruded with a slight jerk out between the lids. The eyelid could not be voluntarily retracted, but it was easy to push the globe backwards into position by a little gentle pressure. In the infrequent and short intervals when the child was at rest, though awake, the eyeballs were somewhat prominent, but during sleep there was no projection.

J. Allan.

Dermoid cyst of the orbit ('*Edin. Med. Journ.*,' 1916, II, *p.* 165). **J. C. Burns** describes a case in a school-girl, aged 12 years, who had complained of diplopia about two weeks prior to admission to hospital. There was a marked fulness over the upper part of the right temple. There was exophthalmos of the right eye, together with a degree of internal and downward rotation of the eyeball. The pupils were equal of normal size and reacted to light and accommodation. The lateral movements and those in an up and down direction were somewhat limited, but the disability seems to have been due to a mechanical rather than a nervous cause. Von Graefe sign positive. The eye was protruded forwards and outwards. The fundus showed nothing except a slight degree of fulness of the veins, suggesting difficulty of return of blood. The vision was nearly full in that eye. The swelling in the region of the orbit was not definitely tender, and did not show signs of inflammation. The upper part of the tumour was of bony hardness, and was continuous with the anterior surface of the frontal bone. Below, the bony surface ended abruptly in a sharp edge well above the zygoma. Below the edge, again, the lower part of the tumour appeared to be soft and elastic. The whole tumour was above and distinct from the zygoma. A skiagram showed a tumour involving an area of the orbit, cranial fossa, and temporal fossa on the right side of the skull. The edge of the tumour was seen to be dense, and the centre quite clear. Potassium iodide in 3 grain doses thrice daily was given, but no improvement occurred. The tumour was removed by operation and proved to be a dermoid cyst. The differential diagnosis from (1) gummatous periostitis, (2) traumatic cephalo-hydrocele, and (3) sarcoma of the orbit is discussed.

J. Allan.

A primary intradural tumour of the optic nerve (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p.* 104).—**E. C. Ellett** reports the case of a negro girl, aged 15 years, who for five years at least had had protrusion and blindness of the right eye. On palpation a tumour could be felt behind the eye about the same size as the eyeball itself. This was found at the operation to be on the optic nerve. The external rectus having been divided, the eye was turned upwards and inwards, and the nerve was cut across in front of the tumour. As attempts to encircle the growth with a snare failed, the tumour was cut off as far back as possible with curved scissors, but an entire removal was found impossible. The eye was replaced, and the external rectus sutured. Histologically the growth proved to be a "telangiectatic glioma." The immediate results of the operation were good, the patient having only slight limitation of the rotation of the eye inwards.

T. R. WHIPHAM.

A case of atrophy of the choroid in a boy aged 15 years (*'Med. Journ. Austral.,'* 1916, II, *p.* 540).—**L. G. Davidson.**—Numerous depigmented spots were found in the mid-periphery of the upper and inner quadrant of the fundus, quite new in appearance. There was a large increase in the amount of pigment at the edges of some of the spots. The macula, papilla, and retinal vessels were healthy.

F. R. B ATKINSON.

Diseases of the eye in children of and under school age (*'Edin. Med. Journ.,'* 1917, I, *p.* 415).—**J. V. Paterson** and **H. M. Traquair** call attention to certain aspects of those diseases of the eye which in children are apt to produce either complete blindness or such impairment of sight as to impede school education and reduce efficiency in later life. The keynote of their observations is the preventability of the larger part of all blindness and impaired vision in children and the enormously preponderating importance of parental venereal disease as a causative factor. More than half of this blindness is the result of syphilis or gonorrhœa in the parents. Next in order come congenital deformities and defects of the eyes such as microphthalmos, infantile glaucoma, etc. Apart from cases of total blindness there is a second group which, on account of the larger number of individuals affected, must be held to be of great importance, namely, those cases in which the vision, though not completely destroyed, is so impaired as to handicap the child from a very early stage and prevent his ultimately becoming an efficient citizen. The causes are very much the same as in the blind group, with this difference, that so-called strumous or phlyctenular keratitis assumes here a very prominent position. Some forms of refractive error, especially high myopia and high astigmatism, are also present in this group, though not in the former. The members of this group, since they are not sufficiently blind to require or obtain the benefits of blind asylums or pensions, receive neither special consideration nor practical sympathy, and are simply allowed to find their own level as wage-earners.

J. ALLAN.

The reduction of myopia in children of school age (*'Glasg. Med. Journ.,'* 1916, II, *p.* 214).—**W. B. Inglis Pollock** points out that progressive myopia is a most serious affection of the eyeball. It may cause blindness by separation of the retina; by circumscribed atrophy of the choroid and retina at the macula; by the myopic crescent extending from the optic nerve entrance until it involves the macula; or by opacities and hæmor-

rhages in the vitreous. Myopia begins almost always during school life. The first step in the treatment of progressive myopia is to stop all near work, including reading, writing, sewing, and painting for a prolonged period. The child should spend the greater part of the day in the open air in parks or spaces where there are long vistas. The patient is, therefore, much better in the country or at the coast than in towns where the range of vision is circumscribed by the surrounding buildings. Added to this, there is also the benefit of pure air and probably more wholesome food. General tonics such as the syrup of the iodide of iron and cod-liver oil should be administered. The author has found great success from the continuous employment of atropine in reducing myopia. It is common knowledge that after a week of atropine the myopia is about a diopter less than prior to using the atropine. This change has always been regarded as due to the relaxation of the accommodation, and accordingly no further reduction in the myopia was thought to be possible by continuing mydriasis. He noted, however, that in certain cases after two or three months of treatment the myopia not only stopped increasing, but actually showed a decrease. In most cases the children attend daily at the school clinic in order that the nurse may apply the atropine ointment. Atropine poisoning and atropine dermatitis have but rarely supervened. The great difficulty has been the exclusion from school work. Parents are rarely willing to keep their children from attending school for such periods as the treatment requires. The classes which have been devised by Bishop Harman for the education of myopes and of the partially blind are admirably suited for this treatment, since all reading, sewing of fine work are forbidden. Short clinical notes of four cases are given. J. ALLAN.

Visual defects: refractive and functional (*'Glasg. Med. Journ.'* 1917, I, *p.* 211).—**J. A. Wilson,** in an examination of over 2000 children in Lanarkshire schools, found 2 per cent. of myopia and 3 per cent. of mixed astigmatism. As the mixed astigmatism of childhood usually passes into myopia during adolescence, then these combined represent about 5 per cent. of myopia in school children of all ages. The percentage of hypermetropia among children is estimated at or about 27 per cent. Functional defects are also met with among children. He gives notes of a case of hysterical amblyopia in a girl aged 14 years and of a case of retinal asthenopia in a schoolboy. J. ALLAN.

The effects of cinematograph displays upon the eyes of children (*'Glasg. Med. Journ.,'* 1917, I, *p.* 206).—**W. B. Inglis Pollock** states that he has seen many young children who have developed squints while frequenting cinematograph displays and older children with congested optic nerves and eye-strain from the same cause. He urges that school children should be allowed to attend these places of amusement only once a month, and he would strenuously object to the introduction of the cinematograph into school teaching except at rare intervals. J. ALLAN.

Bárány's sign in epileptics and school children (*'Boston Med. and Surg. Journ.,'* 1917, CLXXVI, *p.* 877).—**E. A. Tracy.**—Bárány's sign is conjugate deviation of the eyes, when closed, to the right or left. It indicates supranuclear increase of tonus. Among 50 epileptics it was present in 23,

the deviation being to the left in 13. and to the right in 10. The sign is not rare in apparently normal children, as it was found among 191 out of 478 school children between 8 and 14 years of age.

J. D. Rolleston.

Hereditary optic atrophy (*'Birmingham Med. Review,'* 1917, lxxxi, *p.* 95).—**J. J. Evans** records six cases, four of which occurred in children aged between 9 and 16 years of age. In all the cases the evidence of atrophy of the nerve was very marked. No possible cause of toxæmia could be discovered, nor any very definite history pointing to hereditary tendency to nerve degeneration. Treatment had little to do with recovery.

J. D. Rolleston.

The vision of the school child (*'New York State Journ. Med.,'* 1916, xvi, *p.* 486).—**P. Lewes** emphasises the importance of the conservation of vision in the school child, and discusses the following propositions: (1) In order that we may know how much importance to attach to defects of the eyes, we must have exact data as to their incidence, their character, their corrigibility, and their influence in retarding the normal progress of a large number of individuals. (2) In order that we may acquire these facts, standardised methods must be devised which are applicable to the entire school population. (3) Measures must be considered for the analysis of the material so gathered that practicable and facile methods may be employed in each case so that it receives suitable attention.

J. Allan.

Reviews.

Modern Aspects of Heart Disease. By G. A. Sutherland, M.D.Edin., F.R.C.P.Lond., Physician to the Hampstead and North-West London Hospital and to the Paddington Green Children's Hospital.

This is a reprint from the 'Lancet' of the Lumleian Lectures delivered before the Royal College of Physicians this year. All who are engaged in the practice of medicine will have read them, and having done so cannot fail to have been interested in the author's able and lucid exposition of the changing aspects of heart disease, which modern methods of investigation have brought about.

Dr. Sutherland lays stress on the necessity for considering the action of the auricles and of the ventricles separately, and for recognising that what was formerly termed "failure of compensation" is, as has been recently shown, the onset of an abnormal rhythm, *i. e.* auricular flutter or fibrillation. In such a condition the compensatory changes have not broken down: they are there, and still efficient, if the conditions suitable for their action are restored by slowing the rate of the heart's beat. This can be done through the action of digitalis either in checking the rate of impulse discharges at the sino-auricular node, or in blocking some of the rapid contractile impulses at the conducting tissues, so that a diminished number of them reach the ventricle. There is no evidence of any direct action of digitalis on the contraction of the left ventricle or on its rate: the drug acts

bundle, and not directly upon the ventricles themselves. These views as to the action of digitalis in heart disease differ from those which were formerly taught, and have already aroused no little controversy. However, as Dr. Sutherland says, the investigation into the action of digitalis is still in its infancy, or, at any rate, far from complete, and further researches on the subject are necessary. T. R. W.

Blood Pictures: An Introduction to Clinical Hæmatology. By Cecil Price-Jones, M.B.Lond. Five Coloured Plates, 4 Illustrations in the Text. Pp. 91. Bristol: John Wright & Sons, Ltd. Price 6s. 6d. net.

This is a book which meets a real need, and admirably fulfils its object of serving as a guide to the interpretation of reports on blood-counts. It gives the maximum of information in the minimal number of words and embodies the results of long experience in blood examinations. The author employs the word "lymphoid" to describe the non-granular cells, lymphocytes, and large mononuclears, and the word "leucoid" to designate the granular cells, the polymorphonuclears, eosinophils, and mast-cells; and only upon the vagus nerve by increasing its inhibitory functions on the sino-auricular node, the auriculo-ventricular node, or the auriculo-ventricular speaks of lymphoid (lymphocytic) and leucoid (myeloid) leukæmia—a course which seems an improvement on the existing nomenclature. The significance of Arneth's count is regarded as of little importance, and the absence of digestive leucocytosis as quite untrustworthy as a sign of gastric carcinoma. Broadly speaking, a leucoid type of blood is associated with coccic infections, a lymphoid type with bacillary infections, and a lymphoid and a mononuclear type with protozoal infections. Thus, in acute pulmonary tuberculosis imitating lobar pneumonia, the absence of leucocytosis and the lymphoid character of the blood picture are diagnostic. These items are enough to show the clear and practical character of a handy work which will be of great use to busy medical men even though they have a fair acquaintance with the meaning of blood-counts. H. D. R.

Tuberculosis, and How to Avoid It. By Clive Riviere, M.D., F.R.C.P. London: Methuen & Co. Price 1s.

Dr. Riviere begins his book with a remark that the disease was prevalent among the Egyptians as early as 3500 B.C.

In 400 B.C. Hippocrates recognised the contagiousness of the disease. One hundred years after Christ Pliny advocated open air and pine forests.

The author insists on the prevalence and curability of the disease, and points out that even in healthy villages 37 per cent. of children at the age of fourteen were infected, while in a London district nearly all the school children showed arrested or slightly active tuberculosis.

The immunity conferred by mild attacks of the disease is insisted on. The comparative mildness of bovine tuberculosis on men is noted, and on its protective influence considerable stress is laid.

The danger of ailing adults affecting young children and infants is clearly stated. Infants should avoid public houses of all kinds, and especially tramcars.

To avoid street infection children should walk in parks and open spaces. The nursery floor should be covered with washable cork lino.

Infants should be breast fed, and at the age of nine or ten months raw cow's milk may be taken as part of the feed, the rest being sterilised. The raw milk contains bovine tubercle bacilli, which immunise the infant against the far more deadly human bacillus.

This is the original contribution of the book, and is no doubt a sound one. It is not in accordance with public health legislation.

The older child is urged not to put anything in his mouth but food and drink, and to keep his hands and nails clean.

The diet must be varied. Broth, gravy, and soup cannot take the place of meat.

Repeated respiratory gastro-intestinal catarrhs must be avoided by open-air methods, restriction of sweets and unripe fruits.

To prevent household infection, in addition to the usual directions it is stated that soiled articles should be immersed in 2 per cent. lysol, but no mention is made of special laundries for tuberculous persons' linen. In Paris such laundries are attached to the dispensaries.

Arrest or loss of weight in children is the significant symptom of tuberculosis throughout childhood. C. R.

International Health Board (Publication No. 6): Third Annual Report. The Rockefeller Foundation. Pp. 240, with 17 figures. New York, 1917.

The present report, for the year January the 1st to December the 31st, 1916, reviews the activities of this influential Board for the prevention of disease in the Americas and other parts of the world, such as in China, Ceylon, Siam, Antigua, and Barbadoes. The most important campaign was that against hookworm disease (ankylostomiasis), and included measures for educating the people by public and private lectures, conferences at the dispensaries, and demonstrations and talks to school children on the necessary sanitary precautions. The treatment is fully considered, and the rival claims of chenopodium oil, β-naphthol, and thymol discussed. Alarming symptoms, and sometimes death, have been reported from the use of the oil, and there is no doubt that it is highly toxic and often uncertain in its action, but at the same time it remains in favour as a successful parasiticide. Some experiments in Trinidad seem to show that when mixed with equal parts of sodium bicarbonate, thymol is both more effective in the cure of hookworm disease and less likely to cause unpleasant symptoms than when it is mixed with equal quantities of sugar of milk. Experiments in the campaign against malaria in the lower Mississippi River Valley and in Arkansas by means of detecting carriers and freeing them by quinine from infection and by mosquito control were satisfactorily carried out. A yellow fever commission found that in 1916 the only endemic centre in South America was Guayaquil, Ecuador, where General Gorgas would have directed the practical work of eradication had not the war intervened. The School of Hygiene and Public Health at Baltimore, with Dr. W. H. Welch as director, was announced to open in October, 1917, in order to meet urgent needs for instruction and research. H. D. R.

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